

LO-CHLOR CHEMICALS

THE HISTORY

Andrew Simons (1946 – 2006) graduated as a pharmacist from Sydney University in the early 1970's.

After graduating Andrew was quick to establish successful businesses in both Sydney's Eastern Suburbs and later in his career in Sydney's lower north shore.

During his tenure as a pharmacist Andrew worked closely with several hospitals and rehab centres and it was here (unbeknown to anyone) that Lo-Chlor Chemicals would be born.

Through his extensive work on assisting hospitals treat and maintain their hydrotherapy and rehabilitation pools Andrew was quick to discover copper sulphate and its role as the most effective form of algaecide (which is still the case today).

Still working as a pharmacist Andrew developed a low dose organo copper complex known as Lo-Chlor Pool Conditioner that was designed to kill and control algae and fungal infestations for an extended period of time. The main benefits of such a formulation were; it was low in concentration, it was not affected by the addition of chlorine compounds and was guaranteed not to stain pool surfaces.

“Before too long he realised the success of this product was not something he could ignore”

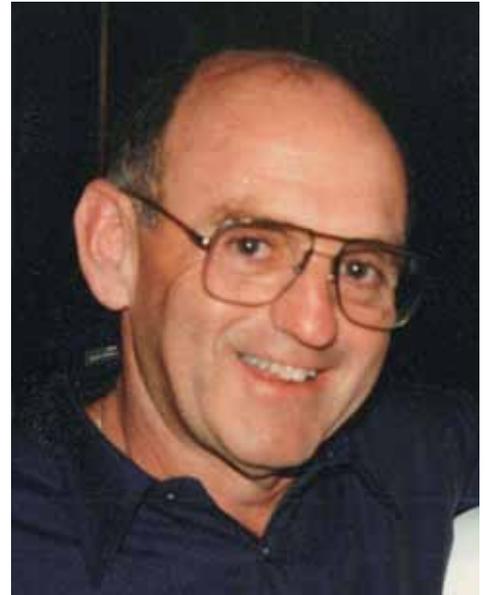
he could ignore and in 1979 Andrew sold up his pharmacies and rented a small factory in Marrickville, Sydney where he started producing the algaecide and what would ultimately become the largest range of specialised pool and spa chemicals seen around the globe.

1983 saw the official registration of M.I International Pty Ltd (trading as Lo-Chlor Chemicals)

Today the company (now owned and run by the Simons family) boasts more than 35 employees, has more than 60 specialty chemicals in its range and is recognised as a market leader around the globe.

Still located in Marrickville Lo-Chlor has a purpose built 2500 square metre facility where it manufactures and produces almost its entire range of specialised chemicals. 100% Australian owned and Australian made Lo-Chlor Chemicals and its staff continues Andrew's legacy and his core business values. Lo-Chlor prides itself not only on service but customer satisfaction and product quality.

In 2006 Lo-Chlor re-established itself in the United States and Canada with the registration of Lo-Chlor Chemicals LLC. It offers a more condensed range of the Lo-Chlor specialty line in the United States but now boasts a full line of both liquid and dry chemicals to be sold throughout Canada and its provinces.



The late Andrew Simons - founder and inspiration behind Lo-Chlor Chemicals

Andrew manufactured the algaecide from the garage of his home in Sydney's east and sold box after box at his pharmacy in Castlecrag, NSW.

Before too long he realised the success of this product was not something

Please feel free to visit the new US website www.lochlor.com.

In 2007 Lo-Chlor established a European operation in The United Kingdom. In a bid to provide better service and faster deliver to its European distributors a full manufacturing facility is now in full swing as Lo-Chlor aims to strengthen is distribution throughout the European markets. Please feel free to visit the new UK website at www.lo-chlor.co.uk.

Along with its vast distribution channel Lo-Chlor has the necessary infrastructure to fully support and supply the Professional Pool & Spa Market on a national basis. Lo-Chlor Chemicals and its experienced staff has the extensive Pool & Spa chemical knowledge, outstanding training skills, exceptional retailing experience and the logistical capabilities to better service the Professional Pool & Spa Market.

The passion and commitment of both the management and sales team together with their combined experience of over 200 years in the industry will ensure our customers remain at the forefront of the Pool & Spa Chemical market.

Lo-Chlor Chemicals has enjoyed consistent year on year sales growth since its inception. This growth can be attributed to the consistent supply of quality products, and the continual personal attention paid to its customers by its committed sales team.

It holds market leadership in Specialty Pool & Spa Chemicals throughout several global markets and is seen as an innovator and leader in this specialised field. Technical expertise and intellectual know-how are resident with the experienced and skilled management and staff.



LO-CHLOR ALGAECIDES

A **HUGE** and **VARIED** range of products that are just **WHAT THE DOCTOR ORDERED** to both **CURE** pool ailments and to **MAINTAIN** them in a **HEALTHY** condition **12 MONTHS OF THE YEAR**.

When **LO-CHLOR POOL ALGAECIDE**, then called Lo-Chlor Pool Conditioner, was first developed in 1979 by Lo-Chlor Chemicals as an algae preventative for swimming pools, the difference between the product and others that were then on the market was that a single dose lasted for three months, making it what is now commonly known as a **LONG LIFE PREVENTATIVE ALGAECIDE**.

The **LO-CHLOR POOL ALGAECIDE** that you see today is still made from exactly the same concentrated formula as the first bottle sold over 30 years ago. In fact the only thing about the product that has changed in all this time is the design of the label.

Today, Lo-Chlor Chemicals have increased their range of **LONG LIFE PREVENTATIVE ALGAECIDES** to be able to offer pool owners a variety of product to suit varying seasons and conditions.

So why are Lo-Chlor's **LONG LIFE PREVENTATIVE ALGAECIDES**, after over 30 years, **STILL** considered to be better products and Australia's leading **PREVENTATIVE ALGAECIDES**?

Because they

- **STILL** guarantee **ALGAE FREE POOLS FOR UP TO 3 MONTHS** with a single dose
- **STILL** contain only the **HIGHEST QUALITY** constituents and the same **UNIQUE NON-STAINING FORMULAS**
- **STILL** cause a marked drop in **POOL CHEMICAL COSTS** and bring happy customers into pool shops **FOUR TIMES A YEAR**
- **STILL** are **GREAT VALUE** and are only available at **PROFESSIONAL POOL OUTLETS**

Lo-Chlor's range of **LONG LIFE PREVENTATIVE ALGAECIDES** comprises

- **LO-CHLOR POOL ALGAECIDE**
- **LO-CHLOR WINTERISER ALGAECIDE**
- **LO-CHLOR SUMMER CARE ALGAECIDE**
- **LO-CHLOR ALGAWAY ALGAECIDE**

However, in many instances, prior to being able to put a pool on a regular **ALGAE PREVENTATIVE** program, you will have to rid the pool of an **EXISTING ALGAE PROBLEM** and to this end, Lo-Chlor have, in their armoury, a vast selection of **HIGHLY CONCENTRATED CURATIVE ALGAECIDES** to rid the pool of **EVERY CONCEIVABLE FORM OF ALGAE**.

All of the **CURATIVE ALGAECIDES** in our range are designed for specific problems and conditions, and have been tried and proven over many years with **OUTSTANDING SUCCESS** in the eyes of both **POOL PROFESSIONALS** and **GRATEFUL POOL OWNERS**.

Lo-Chlor's range of CURATIVE ALGAECIDES comprises

- LO-CHLOR ALGAE KNOCK OUT
- LO-CHLOR BLACK SPOT 900
- LO-CHLOR BLACK SPOT ALGAE KILLER
- LO-CHLOR MIRACLEAR POOL ALGAECIDE
- LO-CHLOR TROPICLEAR POOL ALGAECIDE
- LO-CHLOR TROPICAL POOL ALGAECIDE
- LO-CHLOR POND AND FOUNTAIN ALGAECIDE

We consider it a great compliment that many other manufacturers have chosen to describe their products as being **SIMILAR** to **Lo-Chlor's LONG LIFE PREVENTATIVE** and **CURATIVE ALGAECIDES**.

However, the fact remains that over the years we have been **OFTEN IMITATED** but **NEVER DUPLICATED**.

LO-CHLOR POOL ALGAECIDE (The 90 Day Algaecide)

The No.1 Formulation For LONG TERM ALGAE PREVENTION

Lo-Chlor Pool Algaecide is still the same formulation developed in the late 1970's originally known as Lo-Chlor Pool Conditioner. With its proven success over time Lo-Chlor Pool Algaecide remains pivotal in this range of specialised pool and spa treatments and remains the No.1 algaecide in both Australia and New Zealand.

Features & Benefits

- Unique organo copper complex, completely safe to use with all types of pool surfaces
- Our special non-staining formula out performs all other algaecides
- Lasts for 90 days
- Great maintenance protection product, just like having an insurance policy for your pool
- Kills all types of algae (blue-green, mustard, black, pink)
- Guaranteed non-staining formula
- Excellent booster for salt chlorine generators
- Great for opening pools in the summer
- May be used in all types of pool finishes
- Compatible with all recognised sanitisers and other pool additives.
- Should NOT be used in pools using Ionisers or Natures 2

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 500mls
- 1 Litre
- 5 Litre
- 20 Litre
- 200 Litre

Dosage

- 500mls treats 60,000 litres pool water

Lo-Chlor Pool Algaecide is an excellent general-purpose algaecide that remains active in the pool water for 90 days. It is based on a low dose, organo copper complex, which is extremely effective and highly economical (1L treats up to 120,000 litres pool water). It is effective in controlling all algae types. There is not a pool that won't benefit from this amazing product.

What is the level of copper in the pool water when using Lo-Chlor Pool Algaecide?

When using the normal dosage rate, the copper level is 0.26 ppm. This is well below the acceptable Australian Standards level (0.3 ppm) and also below the WHO (World Health Organisation) level (1.5 ppm).

What prevents the copper in Lo-Chlor Pool Algaecide from dropping out of solution and staining the pool?

Lo-Chlor Pool Algaecide is a specially formulated product containing a unique organo copper complex. This simply means that the copper ion has been complexed to stop it from coming out of solution and possibly causing a pool to stain. The added bonus is that the complex last longer in the water and provides extra algae protection. We guarantee that Lo-Chlor Pool Algaecide will not stain a pool. (This guarantee is dependent on the pool being maintained within Australian Standard levels for balanced water and Lo-Chlor Pool Algaecide being used according to the stated directions).



LO-CHLOR WINTERISER ALGAECIDE

The Original LONG TERM ALGAE TREATMENT OVER WINTER

Developed some 10 years after Lo-Chlor Pool Algaecide, Lo-Chlor Winteriser Algaecide was developed to specifically kill and control algal blooms during winter. Utilising the original organo copper complex, Lo-Chlor Winteriser Algaecide ensures your customer can maintain an algae free (and stain free environment) over the cold winter months.

Features & Benefits

- Enhances chlorine production and chlorine efficiency
- Minimises maintenance during winter
- Unique organo copper complex, completely safe to use with all types of pool surfaces
- Our special non-staining formula out performs all other winter algaecides
- Lasts for up to 90 days
- Great maintenance protection during winter
- Kills all types of algae (blue-green, mustard, black, pink)
- Guaranteed non-staining formula
- May be used in all types of pool finishes
- Compatible with all recognised sanitisers and other pool additives.
- Should NOT be used in pools using Ionisers or Natures 2

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 500mls
- 1 Litre
- 5 Litre
- 20 Litre
- 200 Litre

What prevents the copper in Lo-Chlor Winteriser Algaecide from dropping out of solution and staining the pool?

Lo-Chlor Winteriser Algaecide is a specially formulated product containing a unique organo copper complex. This simply means that the copper ion has been complexed to stop it from coming out of solution and possibly causing a pool to stain. The added bonus is that the complex last longer in the water and provides extra algae protection. We guarantee that Lo-Chlor Winteriser Algaecide will not stain a pool. (This guarantee is dependent on the pool being maintained within Australian Standard levels for balanced water and Lo-Chlor Winteriser Algaecide being used according to the stated directions).



Dosage

- 500mls treats 60,000 litres pool water

Did you know? By adding a dose of Lo-Chlor Winteriser Algaecide

- a) You need only chlorinate your pool once every 10 – 14 days?
- b) You need only run your filter for a minimum of 2 hours a day?
- c) Your salt chlorinator runs more efficiently?
- d) You are cutting electricity costs during winter saving your customer money and helping the environment by lowering carbon emissions

LO-CHLOR SUMMER CARE ALGAECIDE

Specially Formulated For **SUMMER CONDITIONS**

Features & Benefits

- Treatment and prevention of algae problems during hot summer months.
- Effective over a wide pH range, best results between 7.0 and 7.2.
- The lower pH allows easier cellular penetration.
- Used for eradication and prevention of blue-green, black spot and mustard algae.
- Will prevent occurrence of algae for up to 3 months.
- Slow release organo copper complex exclusive to Lo-Chlor Algaecides
- May be used in all types of pool finishes.
- Compatible with all recognised sanitisers and other pool additives.
- Significant clarifying effect.
- Excellent booster for salt water chlorinators.
- Should NOT be used in pools using Ionisers or Natures 2

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 1 Litre

Dosage

- 1L treats 50,000 litres pool water

A few tips from the Lo-Chlor team...

1. Good preparation always makes good sense.
2. Lower pH (approx 7.0 – 7.2) before use.
3. Vacuum and backwash filter. Regular brushing recommended.
4. Use in conjunction with Starver® Pool Maintenance for very heavy infestations.
5. After algae have been removed always advise customers to follow up with regular dosing of a Lo-Chlor Long Life Algaecide and Starver® Pool Maintenance to prevent re-occurrence of algae and assist other chemicals to work more effectively.



LO-CHLOR ALGAWAY ALGAECIDE

ECONOMICAL MAINTENANCE Algaecide

An economical Long Life Algaecide that will prevent algae growth for up to 3 months

Features & Benefits

- Used for eradication and prevention of blue-green, black spot and mustard algae.
- Will prevent occurrence of algae for up to 3 months.
- Economical and easy to use.
- Utilises a slow release formulation.
- May be used in all types of pool finishes.
- Compatible with all recognised sanitisers and other pool additives.
- Effective over a wide pH range.
- Significant clarifying effect.
- Excellent booster for salt water chlorinators.
- Should NOT be used in pools using Ionisers or Natures 2

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 1 Litre
- 20 Litre

Dosage

- 1L treats 50,000 litres pool water

A few tips from the Lo-Chlor team...

1. Do not use Lo-Chlor Algaway in pools using an ioniser or Natures 2.
2. Do not Superchlorinate for 48 hours before and after using Lo-Chlor Algaway.
3. Reduce pH to between 7.00 and 7.2 for best results. At lower pH the waxy coating surrounding algae cells is greatly softened and allows easier penetration by chemicals.
4. Regular brushing is recommended to assist in algae removal.
5. Use in conjunction with Starver® Pool Maintenance for very heavy infestations.
6. After algae have been removed always advise customers to follow up with regular dosing of a Lo-Chlor Long Life Algaecide and Starver® Pool Maintenance to prevent re-occurrence of algae and assist other chemicals to work more effectively.



LO-CHLOR ALGAE KNOCK-OUT

Valuable Treatment For RESISTANT ALGAE STRAINS

Originally developed for ALL types of algae, Lo-Chlor Algae Knock-Out is now widely known as the No.1 treatment for stubborn algae strains in pebble pools and ageing pool surfaces.

Features & Benefits

- Use in all types of pools.
- Effective against blue-green, black spot and mustard algae.
- A favourite for pebble surfaces and ageing pool surfaces.
- Especially popular with salt chlorinated pool and ionised pools.
- Quaternary ammonium base - dual action formulation.
- As well as lysing the algae cells, the increased detergent action (foaming) assists in releasing the clinging algae crusts from pool surface.
- For severe algae infestations use in conjunction with Lo-Chlor Black Spot 900 Algaecide

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 2.5L
- 5L
- 20L

Dosage

- 2.5L treats 50,000 litres pool water

A few facts from the professionals...

1. Advise pool owner that product may foam and smell for up to 10 days.
2. Reduce pH to 7.2 for best results.
3. Use with Starver® Pool Maintenance for badly infested pools.
4. Note: High doses of quaternary ammonium compound may combine with free chlorine, resulting in excess levels of combined chlorine. This phenomenon lasts 2 or 3 days.
5. Addition of Lo-Chlor Aqua-Boost is recommended if condition persists.
6. When added to a pool running with a salt chlorinator the ammonia occasionally reacts with the gases produced in the salt chlorinator cell causing fine bubbles to form on the surface of the pool.
7. These bubbles will dissipate as soon as the chlorinator is switched off and usually only last 5-7 days.



LO-CHLOR BLACK SPOT 900 ALGAECIDE

Concentrated Treatment To Kill BLACK SPOT Algae

A first for Lo-Chlor offering a 90% Tri-Chlor granular black spot treatment

Features & Benefits

- ONLY TO BE USED in pebblecrete, white plaster and tiled pools
- Contains 900g/Kg Available Chlorine present as TriChloroisocyanuric Acid
- Highly concentrated and non metallic
- Not affected by high levels of chlorine
- Low pH promotes better performance
- Kills black spot 'blue-green' algae
- Granules can be directed towards affected area
- Dissolves slowly to stay in contact with affected area longer

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 1Kg

Dosage

- 1Kg treats 50,000 litres pool water

A few facts from the professionals...

1. Adjust pH to 7.2
2. Place product directly onto the affected area
3. Wait 24 - 36 hours
4. Scrub with wire brush if necessary. Dosage rates indicated are a guide only. Please refer to the label on the bottle for further instructions.
5. We recommend that you obtain advice from your Lo-Chlor Chemicals Pool Professional before applying this treatment to your pool or spa.



LO-CHLOR BLACK SPOT ALGAE KILLER

NEW Concentrated Algaecide For BLACK SPOT Algae

This highly concentrated blend from Lo-Chlor is ideal for light and heavy infestations of black spot algae in all types of swimming pools.

Features & Benefits

- Use for the treatment of severe, resistant algae strains.
- Effective over a wide pH range, best results at pH between 7.0 and 7.2.
- At lower pH, the waxy coating surrounding algae cells is greatly softened, allowing easier penetration by chemical.
- Compatible with all recognised sanitisers and other pool additives.
- Do not Superchlorinate for 48 hours before and after product addition
- For severe algae infestations use in conjunction with Lo-Chlor Black Spot 900 Algaecide
- Should NOT be used in pools using Ionisers or Natures 2

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 1L
- 20L

Dosage

- 1L treats 50,000 Litres of pool water



A few facts from the professionals...

1. Concentrated Black Spot Algae Killer is a combination of the organo copper complex contained in Lo-Chlor Pool Algaecide together with the proven agent, Alkyl Dimethyl Benzyl Ammonium Chloride. Both are very effective anti-algae treatments. Combined they will overcome the most resistant of algae strains.
2. As the compound suggests this blend contains ammonia.
3. When added to a pool running with a salt chlorinator the ammonia occasionally reacts with the gases produced in the salt chlorinator cell causing fine bubbles to form on the surface of the pool.
4. These bubbles will dissipate as soon as the chlorinator is switched off and usually only last 5-7 days.
5. Note: High doses of quaternary ammonium compound may combine with free chlorine, resulting in excess levels of combined chlorine. This phenomenon lasts 2 or 3 days.
6. Addition of Lo-Chlor Aqua-Boost is recommended if condition persists.

LO-CHLOR MIRACLEAR POOL ALGAECIDE

A World FIRST In METAL FREE ALGAECIDES

This highly concentrated formulation from Lo-Chlor Chemicals is a uniquely formulated metal free, heavy duty algaecide with a built in clarifier

Features & Benefits

- Regarded as the most effective algaecide to fight a green pool.
- 100% Australian only formulation
- Known as an Oxiraine
- Long chain polymer gives longer lasting algaecide properties
- Inexpensive and very effective
- Compatible with ALL sanitisers, surfaces and chemicals
- Will not affect water balance or bathers
- Ideal for ornamental ponds and fountains.

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 1L
- 20L

Dosage

- Initial Dosage: Use 150ml product per 10,000 Litres.
- Maintenance Dosage: Use 80ml product per 10,000 litres every seven days.
- Heavy Algae Growth/Winter Dose: Use 300ml per 10,000 Litres.

A few facts from the professionals...

1. Lo-Chlor Miraclear Algaecide does not contain any trace metals. It is therefore ideal for Ionised pools and Nature 2 pools and spas.
2. It is non foaming and non staining so is an ideal algaecide for fountains and ornamental ponds.
3. Unlike other non copper algaecides it does not contain Alkyl Dimethyl Benzyl Ammonium Chloride.
4. It is therefore ideal for salt pools and pools with high combined chlorine levels.



POND & FOUNTAIN ALGAECIDE & CLARIFIER

Effective Algaecide for PONDS & FOUNTAINS

Features & Benefits

- Unique copper complex, safe to use where fish are present
- Utilises the Lo-Chlor non-staining formulation
- Kills all types of algae (blue-green, mustard, black, pink)

Sizes

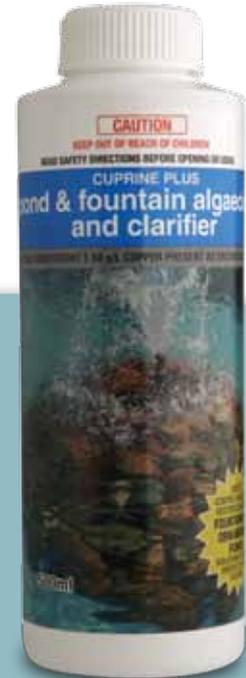
- 500mls

Dosage

- See instructions for detailed dosage rates

Extra Insights into Lo-Chlor Pond & Fountain Algaecide and Clarifier...

- Whilst every effort has been made to formulate this product so as to have minimal effect on fish and the environment, it is impossible to guarantee safety with fish.
- Try to isolate fish before adding product.
- Where large clumps of algae are present an attempt should be made to remove these with a scoop (or other means) before adding the product.



LO-CHLOR TROPICLEAR POOL ALGAECIDE

The STRONGEST Algaecide In The Lo-Chlor Range

Originally developed for the harsh tropical climates of far north QLD, Lo-Chlor Tropiclear Pool Algaecide fast became the benchmark as the most effective and most potent product for killing ALL types of algae.

Features & Benefits

- Use for the treatment of severe, resistant algae strains.
- Effective over a wide pH range, best results at pH between 7.0 and 7.2.
- At lower pH, the waxy coating surrounding algae cells is greatly softened, allowing easier penetration by chemical.
- Compatible with all recognised sanitisers and other pool additives.
- Do not Superchlorinate for 48 hours before and after product addition
- For severe algae infestations use in conjunction with Lo-Chlor Black Spot 900 Algaecide
- Should NOT be used in pools using Ionisers or Natures 2

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 2.5L
- 5L
- 20L

Dosage

- 2.5L treats 50,000 litres pool water

A few facts from the professionals...

1. Lo-Chlor Tropiclear Algaecide is a combination of the organo copper complex contained in Lo-Chlor Pool Algaecide together with the proven agent, Alkyl Dimethyl Benzyl Ammonium Chloride. Both are very effective anti-algae treatments. Combined they will overcome the most resistant of algae strains.
2. As the compound suggests this blend contains ammonia.
3. When added to a pool running with a salt chlorinator the ammonia occasionally reacts with the gases produced in the salt chlorinator cell causing fine bubbles to form on the surface of the pool.
4. These bubbles will dissipate as soon as the chlorinator is switched off and usually only last 5-7 days.
5. Note: High doses of quaternary ammonium compound may combine with free chlorine, resulting in excess levels of combined chlorine. This phenomenon lasts 2 or 3 days.
6. Addition of Lo-Chlor Aqua-Boost is recommended if condition persists.



LO-CHLOR TROPICAL POOL ALGAECIDE (for QLD and N.T only)

The **STRONGEST** Algaecide In The Lo-Chlor Range

Originally developed for the harsh tropical climates of far north QLD, Lo-Chlor Tropical Pool Algaecide fast became the benchmark as the most effective and most potent product for killing ALL types of algae.

Features & Benefits

- Use for the treatment of severe, resistant algae strains.
- Effective over a wide pH range, best results at pH between 7.0 and 7.2.
- At lower pH, the waxy coating surrounding algae cells is greatly softened, allowing easier penetration by chemical.
- Compatible with all recognised sanitisers and other pool additives.
- Do not Superchlorinate for 48 hours before and after product addition
- For severe algae infestations use in conjunction with Lo-Chlor Black Spot 900 Algaecide
- Should NOT be used in pools using Ionisers or Natures 2

Remember – always test for phosphates after the addition of a Lo-Chlor Algaecide

Sizes

- 2.5L
- 5L
- 20L

Dosage

- 2.5L treats 50,000 litres pool water



A few facts from the professionals...

1. Lo-Chlor Tropical Pool Algaecide is a combination of the organo copper complex contained in Lo-Chlor Pool Algaecide together with the proven agent, Alkyl Dimethyl Benzyl Ammonium Chloride. Both are very effective anti-algae treatments. Combined they will overcome the most resistant of algae strains.
2. As the compound suggests this blend contains ammonia.
3. When added to a pool running with a salt chlorinator the ammonia occasionally reacts with the gases produced in the salt chlorinator cell causing fine bubbles to form on the surface of the pool.
4. These bubbles will dissipate as soon as the chlorinator is switched off and usually only last 5-7 days.
5. Note: High doses of quaternary ammonium compound may combine with free chlorine, resulting in excess levels of combined chlorine. This phenomenon lasts 2 or 3 days.
6. Addition of Lo-Chlor Aqua-Boost is recommended if condition persists.

AQUAFRESH™ by LO-CHLOR

AQUAFRESH is a revolutionary 3 step CHLORINE FREE pool care system.

At last, pool owners have an alternative to the traditional chlorine pool that is odour free, gentle on bathers and equipment and provides outstanding water clarity.

AQUAFRESH™ SANITISER

- THE ESSENTIAL and MOST IMPORTANT PRODUCT in the range
- NON CHLORINE sanitiser specially formulated for swimming pools
- TOTALLY REPLACES the need for CHLORINE or OTHER SANITISERS in swimming pools

Features & Benefits

- AQUAFRESH™ SANITISER is a non chlorine sanitiser that is approved for use in residential pools
- It has been specially formulated to prevent the growth of various pathogens that can cause disease in pools.
- Because it contains neither chlorine nor bromine, it may be used without any of the inherent side effects, such as smell, sticky feeling and sore eyes, associated with these products.
- It is especially ideal for allergy sufferers, including those who endure asthma or skin problems. It is like being in clean fresh water.
- It is gentle on skin, hair and clothing and the freshness can provide a sense of total wellbeing
- You will not be breathing in chemical fumes as may be the case when using some other sanitisers
- Normal dosing is once every week, making a pool using the AQUAFRESH™ SYSTEM both easy and economical to maintain.

Additional benefits

- AQUAFRESH™ SANITISER may be used in all types of pool finishes
- It is compatible with ozone generators and ionisers
- It has no effect on heaters thus giving longer heater life
- It is compatible with all recognised pool equipment, such as heaters and pumps, which are associated with manufacturers' warranties
- It allows a pool to be balanced according to builders' recommendations.
- It is non-foaming meaning that it will not block filters, not leave a mess on the pool walls, not cause the heater to corrode and not damage clothing, towels or hair etc

Dosage:

- 60mls per 10,000 Litres pool water
- Repeat every week or as necessary

Sizes:

- 1 Litre
- 2.5 Litres
- 5 Litres



AQUAFRESH™ ENHANCE

- Used in CONJUNCTION with AQUAFRESH™ SANITISER
- WEEKLY application for ALGAE CONTROL and ENHANCED WATER CLARITY
- Works in ALL filtration media

Features & Benefits

- AQUAFRESH™ ENHANCE is a patented formula specially designed to complement AQUAFRESH™ SANITISER
- It has been specially formulated to help prevent the growth of various algae in swimming pools
- It ASSISTS filtration, providing exceptional WATER CLARITY
- Normal dosing is once every week, making a pool using the AQUAFRESH™ SYSTEM both easy and economical to maintain.

Additional benefits

- AQUAFRESH™ ENHANCE may be used in all types of pool finishes
- It is compatible with ozone generators and ionisers
- It has no effect on heaters thus giving longer heater life
- It is compatible with all recognised pool equipment, such as heaters and pumps, which are associated with manufacturers' warranties
- It allows a pool to be balanced according to builders' recommendations.

Dosage:

- 50 mls per 10,000 Litres pool water WEEKLY

Sizes:

1 Litre

2.5 Litres

5 Litres

- For additional algae control, use ONLY "Lo-Chlor Pool Algaecide"



AQUAFRESH™ PERFORMANCE

NON CHLORINE SHOCK TREATMENT for pools

We all know that pools harbour all types of organic material. Bacteria, viruses, algae as well as other organic deposits from leaves, dust, dirt, body oils, fats, urine and other exudates all place a heavy load on sanitisers.

AQUAFRESH™ PERFORMANCE has the ability to oxidise protein and other organic material.

Benefits

- Oxidises organic contaminants.
- Used regularly – potentiates the effect of AQUAFRESH™ SANITISER.
- Contains clarifying agent for sparkling clear water

Additional Benefits

- AQUAFRESH™ PERFORMANCE is composed of Sodium Percarbonate
- Sodium Percarbonate has an active oxygen content of 13.5% minimum which is much higher than monopersulphate or perborate compounds.
 - These compounds have oxygen contents of 4.5% and 10%.
 - It is for this reason that MUCH LESS of AQUAFRESH™ PERFORMANCE is required to treat a pool.
- When dissolved in water Sodium Percarbonate converts to Sodium Carbonate plus Hydrogen Peroxide - the oxidising component.
 - Hydrogen Peroxide is considered to be an effective bacteriostat

Important Notes

- AQUAFRESH™ PERFORMANCE DOES NOT REPLACE a sanitiser.
- Sodium Carbonate does cause an increase in pH however because of the small amount of product used the effect on pH is minimal
- DO NOT EXCEED the recommended dose rate

Dosage:

- 50gm per 10,000 Litres pool water every 2 weeks
- If bathing load is heavy, increase to 100gm per 10,000 litres every 2 weeks

Sizes:

- 1 kg
- 5 kg



AQUASPA® by LO-CHLOR

One company's healthy pursuit for a healthy spa

It's ironic that we try to relax in our spa when it could be brimming with toxic cleaning products. The high water temperature coupled with heavy usage means your spa will forever require regular maintenance to keep it healthy, safe and clean.

Yet what products will you choose to keep your water free from bacteria and viruses?

The obvious place to start is a user friendly and safe sanitiser to kill bacteria. Most people rush into a pool shop and automatically head straight for chlorine, yet they don't consider the drawbacks like skin and eye irritations plus the bad smell.

Lithium Hypochlorite is also popular however a simple feeder has yet to be invented, meaning you need to manually administer it each and every day.

These days people hold Bromine in high regard as a sanitiser, because it is slow dissolving and ideal for warmer water. It also doesn't produce any of the unpleasant side effects normally associated with chlorine.

However as we become more educated, many are starting to choose non-chlorine and non-bromine solutions for their spas.

Lo-Chlor Chemicals, has developed The AquaSpa® Range, an innovative new range that treats spas effectively; its Sanitiser is gentle on the skin, the hair and clothing and also your spa and equipment. It's specially formulated to control the growth of bacteria and diseases.



“Free of chlorine and bromine, it doesn’t smell nor sting the eyes...”

Free of chlorine and bromine, it doesn’t smell nor sting the eyes, and best of all, you won’t breathe in chemical fumes as you may with other sanitisers. What’s more, weekly doses make it both easy and economical to administer.

As you can see, great, healthy advances are being made in spa treatments.

As Lo-Chlor and other companies will testify, a spa is meant to be a gentle, relaxing therapeutic experience so why use a product that produces anything less.

What is the AquaSpa® program?

The program is designed for all types of spas and hot tubs and involves the use of 3 user friendly companion products. It has been specially formulated for both adults and children who are sensitive to bromine or chlorine in particular.



AQUASPA® SPA SANITISER

The ESSENTIAL, MOST IMPORTANT Product In The Range

Totally replaces the need for chlorine or bromine in spas and hot tubs

Features & Benefits

- Is a non chlorine sanitiser that is approved for use in residential spas and hot tubs.
- It has been specially formulated to prevent the growth of various pathogens that can cause disease in spas.
- Because it contains neither chlorine nor bromine, it may be used without any of the inherent side effects, such as smell, sticky feeling and sore eyes, associated with these products.
- It is especially ideal for allergy sufferers, including those who endure asthma or skin problems. It is like being in clean fresh water.
- It is gentle on skin, hair and clothing and the freshness can provide a sense of total wellbeing
- You will not be breathing in chemical fumes as may be the case when using some other sanitisers
- Normal dosing is once every week, making a spa using the LO-CHLOR AQUASPA™ PROGRAM both easy and economical to maintain.

Additional benefits

- May be used in all types of spa finishes
- Is compatible with ozone generators and ionisers
- Has no effect on heaters thus giving longer heater life
- Is compatible with all recognised spa equipment, such as heaters and pumps, which are associated with manufacturers' warranties
- Allows a spa to be balanced according to builders or manufacturers recommendations.
- Is non-foaming meaning that it will not block filters, not leave a mess on the spa walls, not cause the heater to corrode and not damage clothing, towels or hair etc

Dosage

- 60mls per 1000L spa water
- Repeat every week or as necessary

But wait, there's more...

For troubleshooting and extra tips why not visit our new website www.aquaspa.com.au



AQUASPA® SPA SHOCK

AQUASPA® SPA KLEER

The Two COMPANION PRODUCTS to AQUASPA® SPA SANITISER

AQUASPA® SPA SHOCK

- Is a powerful non-chlorine shock treatment and oxidiser. It is used to remove organic micro particles that cause cloudy or green water as well as body fat residues.

Dosage

- 20g per 1000L spa water
- Repeat every week or as necessary

AQUASPA® SPA KLEER

- Is a revolutionary clarifying agent that will maintain a superb ongoing sparkle and sheen in your spa water

Dosage

- 60mls per 1000L spa water
- Repeat every week or as necessary

A few insights from the spa professionals...

- Each week add 60ml of AQUASPA™ SPA SANITISER per 1000 litres.
- Each week add 60ml of AQUASPA™ SPA KLEER per 1000 litres
- Each week add 20 grams of AQUASPA™ SPA SHOCK per 1000 litres

If you experience HEAVIER THAN NORMAL bather loads an EXTRA dose of AQUASPA™ SPA SHOCK may be required after use

Do NOT overdose chemicals (MORE is NOT BETTER)

When first changing to this system (or if the spa has been shock cleaned) allow a week or two for settling before optimum results will be seen.



THE AQUASPA™ RANGE

AQUASPA™ SPA SANITISER (Step 1)

The sanitiser – the jewel in our crown of AQUASPA™ Solutions

Sizes: 500ml, 2.5 Litre and 5 Litre

AQUASPA™ SPA SHOCK (Step 2)

A non chlorine shock treatment to use in conjunction with AQUASPA™ SPA SANITISER and SPA KLEER.

Sizes: 500gm, 1Kg and 5Kg

AQUASPA™ SPA KLEER (Step 3)

A clarifying agent to use in conjunction with AQUASPA™ SPA SANITISER and SPA SHOCK.

Sizes: 500ml, 2.5 Litre and 5 Litre

AQUASPA™ ALKALINITY ENHANCER

Increases pH and TOTAL ALKALINITY in Aquaspa™ spas and hot tubs.

Size: 500gm

AQUASPA™ PH REDUCER

Reduces pH and TOTAL ALKALINITY in Aquaspa™ spas and hot tubs.

Size: 500gm

AQUASPA™ CALCIUM ENHANCER

Increases CALCIUM HARDNESS levels in Aquaspa™ spas and hot tubs.

Size: 500gm

AQUASPA™ INSTANT FILTER KLENZ (Non Soak Formulation)

INSTANT results, NON SOAK formulation - Just SPRAY ON and HOSE OFF. Proprietary blend removes GRIME, ORGANIC BUILD UP and CALCIUM SCALE. For easy, regular cleaning of filters to help them maintain optimum efficiency.

Size: 500ml

AQUASPA™ PIPE KLENZ

For periodic cleaning of pipe-work which may be harbouring grime and noxious odours.

Size: 500ml

AQUASPA™ ANTI-FOAM

CONCENTRATED anti foam QUICKLY breaks down SCUM, FOAM and BUBBLES.

Sizes: 500ml and 5 litre

AQUASPA™ CHLORINE REMOVER

Remove chlorine and bromine levels from your water prior to the addition of Aquaspa Sanitiser. A MUST for all users.

Size: 500gm

AQUASPA™ START-UP KIT

Contains 1 OF EACH of the FULL RANGE of Aquaspa™ products listed in the range above. All products are either 500mls or 500g in size. The Start-Up Kit also contains INSTRUCTIONS, CONSUMER TEST KIT and 60ml GRADUATED MEASURING CUP.

AQUASPA™ CONSUMER TEST KIT BY LAMOTTE

Tests pH along with Aquaspa™ Spa Sanitiser levels in spas and swimspas.



THE AQUASPA™ RANGE

AQUASPA™ COLOURQ 5 HANDHELD DIGITAL TEST KIT BY LaMotte

Handheld digital photometer - accurately measures five pool and spa test directly on a digital display. The meter will measure the following: Aquaspa Sanitiser, pH, Alkalinity and Calcium Hardness.

AQUASPA™ 60MLS GRADUATED MEASURING CUP

A GRADUATED MEASURING CUP to MEASURE and DOSE spas accurately



clarifiers and flocculants

What is Cloudy Water?

Water containing fine particles that reflect back the light. The particles are held in suspension by static electric charges which repel one another. The particles are from 0.5 to 5.0 Micrometers in diameter and are too small to be filtered out by a sand or cartridge filter. A Diatomaceous Earth (D.E.) filter will filter fine enough to remove these particles so a D.E. filtered pool rarely has a cloudy water problem.

Particles that cause cloudy water can be from any number of sources such as Algae, Suntan Lotion, Body Fats, Skin Proteins, Sand, Pollen, Earth, Granular Calcium Hypochlorite and Calcium Carbonate.

What Causes Cloudy Water?

- **High pH:** Which causes Calcium Carbonate to come out of solution. The pool takes on a milky appearance.
- **Algae.** The start of an Algae infestation. In the early stages the pool may just seem hazy but after a day or two the familiar green colour develops
- **Heavy Bathing Load.** Which in reality is a mixture of suntan lotion, body fats and skin proteins. All these products react with Chlorine to form insoluble compounds which have to be filtered out. Swimmers add significantly to the cloudiness of pool water. We have all seen how a pool that is crystal clear in the morning will be quite hazy at the end of a day's swimming.
- **Insufficient filtration time.** Pool filtration systems are sized so as to give a complete pool water turn over in eight hours. It follows that all pools need eight hours filtration every day. It is also possible that filtration equipment too small for the pool has been fitted.
- **When the backyard washes into the pool after a thunderstorm.** A regular occurrence for some pool owners and a nightmare for others. When rain water washes over garden beds before emptying into the pool it collects a variety of chemicals which effect the pool including detergents, nitrates, phosphates, metals that can stain, Algae spores, as well as assorted cigarette ends, plastic bags and doggie do doos.

Clarifiers versus Flocculants

- A Clarifier is a chemical that coagulates fine particles together which then are filtered out.
- A Flocculant is a chemical that coagulates fine particles together, which when the pump is turned off, fall to the floor of the pool under gravity and are then vacuumed to filter or to waste.

Before chemical treatment it should be noted that dose rates for Clarifiers and Flocculants are important. All Clarifiers and Flocculants work in 24 hours or less

Overdosing of chemicals will not improve the clarity faster nor will twice the dose clear twice as much cloudiness. In fact **overdosing can make matters worse**, especially with products containing Alum.

Clarifiers and Flocculants work by neutralising the positive electric charge on the particles which then clump together and are either filtered out or fall to the floor. Too much Clarifier or Flocculant can reverse the charge on the particles making it much harder to filter them out.

All Clarifiers and flocculants work in 24 hours or less.

LO-CHOR MAXI FLOC PLUS

HEAVY DUTY Liquid Flocculant.

A specialised blend of our liquid floc combined with a concentrated polymer resin Maxi Floc Plus will settle debris and organic matter to the floor of the pool in 3 – 6 hours.

Benefits

- Clears the cloudiest pools in under 6 hours
- Use to remove dead algae and other floating particles
- No messy residue

Important Notes

- Will not work if algae are present.
- Superchlorinate before using Lo-Chlor Maxi-Floc Plus
- Prior to adding Lo-Chlor Maxi-Floc Plus, adjust pH between 7.5 and 7.8
- If your TDS reading is above 1500ppm, this product will not work effectively
- Unless sufficient Lo-Chlor Maxi-Floc Plus is used, floccing activity will be minimal
- Set the filter to BY-PASS or RECIRCULATE, otherwise remove filter grids prior to application
- After debris has dropped to the bottom of the pool, vacuum to waste where possible, clean the filter and adjust your chemicals if necessary

Sizes

- 1L
- 20L

Dosage

- 1L per 50,000 Litres of pool water

What is the difference between a clarifier and a flocculent?

A clarifier is designed to be used with a filter system, so particles coagulate in the filter. A flocculent is NOT to be used with the filtration system as the filter may clog. Flocculants are formulated to drop particles to the bottom of the pool, so they can be vacuumed away.

Is Maxi-Floc Plus effective in salt-water pools?

When using Lo-Chlor Maxi-Floc Plus in water containing rich concentrations of positively charged ions (salt-water pools) we always educate our dealers to be aware that the overall floc size is reduced. The result is a floc of lighter appearance and intensity than might otherwise be anticipated.

- We have combated this reduced floc size with the new polymer resin thus ensuring Lo-Chlor Maxi-Floc Plus is the most efficient and successful floc when used in salt water pools.



LO-CHLOR MIRACLEAR CUBES

The Amazing Clarifier In A GEL CAP.

The original CONCENTRATED CLARIFIER IN A CUBE that lasts for up to 30 days.

Now with added PHOSPHATE REMOVER,

LO-CHLOR MIRACLEAR CUBES are the premier clarifier cubes available today.

They are the ONLY CUBES that can be used with ALL KNOWN FILTERS.

- Super concentrated
- Non toxic & 100% biodegradable.
- Keeps water sparkling for 30 days
- No spill, no mess, no measuring
- Removes stain-causing metals and undissolved particles
- Removes PHOSPHATES
- Does not affect water chemistry
- Just drop in pump basket; dissolves within a 24 hours pump run time

Sizes:

35gm cube treats up to 60,000 litres

50gm cube treats up to 120,000 litres



LO-CHLOR MIRACLEAR LIQUID POOL CLARIFIER

HEAVY DUTY Clarifying Agent

Arguably the strongest clarifier on the market.

Boasting a unique, concentrated polymer resin Miraclear Liquid provides amazing results in a matter of hours.

Benefits

- Unique polyelectrolyte formulation
- Effective clarifier, compatible with all types of pool systems and surfaces
- Will not affect pH balance
- 20% stronger than other major brands
- Non-toxic and non-irritating
- Biodegradable
- Improves filter efficiency

Important Notes

- Can be used as an alternative floccing agent to Alum compounds.
- Excellent sand filter conditioner
- When used consistently, reduces the organic content of your pool water so that you will need to use less chlorine, bromine and algacide

Sizes

- 1L
- 5L
- 20L

Dosage

- 500mls treats 50,000L pool water



Did you know?

- Lo-Chlor Miraclear Liquid Pool Clarifier is a great alternative where floccing is not an option?
- This is particularly useful in small above ground pools where no waste line is present
- Simply add the recommended dose of clarifier and let the particles run through normal filtration
- Ensure you regularly clean out the filter or backwash accordingly
- You will be AMAZED at the results

LO-CHLOR P.A.C. SOLUTION

Commercial clarifier that can be used in all pool types.

What is P.A.C.?

LO-CHLOR P.A.C. is Poly Aluminium Chloride.

Poly Aluminium Chloride products are aluminium-based coagulants. They are similar to (Alum) Aluminium Sulphate, with several important differences:

- Partially pre-neutralised (Higher basicity than alum).
- Contain Cl instead of SO₄.
- Contain up to 3 times the aluminium content.

Some of the advantages of LO-CHLOR P.A.C. over conventional Aluminium Sulphate are

- Lower dosage requirement
- No requirement for any neutralising agent (soda, lime)
- Shorter flocculation time
- Smaller amount of sludge
- Reduced number of back washing steps
- Higher quality of the treated water.

Technically LO-CHLOR P.A.C. is an inorganic cationic polyelectrolyte. This means that it contains long chains of positively charged molecules. In the water it behaves somewhat like (Alum) Aluminium Sulphate in that it reacts and binds to form large, heavy flocs that sink to the pool bottom.

How does it work?

Turbid water generally contains many tiny particles that are only a few microns in diameter. These particles will typically all have the same negative chemical charge. These particles form what is known as colloidal suspension. That is, since the particles all carry the same charge, they repel each other, so they do not settle. Also, because they are very small, they are almost impossible to filter out. When LO-CHLOR P.A.C. is added to water that contains these colloidal particles it binds them in to larger aggregates that can settle to the bottom of the pool.

Benefits

- Poly Aluminium Chlorides are synthetic polymers dissolved in water.
- They react to form insoluble aluminium poly-hydroxides which precipitate in big volumetric flocs.
- The flocs absorb suspended pollutants in the water which are precipitated with the LO-CHLOR P.A.C. and can together be easily removed.
- Very easy to apply
- Used extensively in commercial pools, swim schools as well as hotel and resort pools

Size:

20 Litres

Dosage:

5 Litres treats 250,000 Litres pool water



LO-CHLOR PREMIUM STRENGTH COMMERCIAL CLARIFIER

LO-CHLOR PREMIUM STRENGTH COMMERCIAL CLARIFIER is a natural concentrated clarifier that is specially formulated to remove body fats and oils in COMMERCIAL POOLS

The product is made from CHITIN

Chitin (pronounced kite-in) came into being in the 1970's when the EPA ordered fishing companies to stop dumping the shells of crabs and lobsters back into the ocean. Researchers discovered that the chitin contained in the shells had properties that could be applicable in a variety of industrial uses. Similar to cellulose, chitin is a naturally occurring polymer. It is also the only naturally occurring polyelectrolyte.

Chitin is produced in a patented formula called LO-CHLOR PREMIUM STRENGTH COMMERCIAL CLARIFIER which, as the name implies, is specially designed for COMMERCIAL POOL use.

Benefits

- The properties of chitin enable it to attach itself to a variety of organic contaminants, minerals, metals and oils.
 - The result is clearer, cleaner water with less staining and scaling.
- It also has a beneficial effect on the filtering medium, whether sand, DE or cartridge.
- The efficiency of filtering improves with regular use
 - Chitin's natural coagulants help the filter to trap more dirt and debris.
- LO-CHLOR PREMIUM STRENGTH COMMERCIAL CLARIFIER is compatible with all types of pool chemicals and pool finishes
- It is a great addition to any sanitising program.

Additional Tips

- LO-CHLOR PREMIUM STRENGTH COMMERCIAL CLARIFIER is added as a liquid directly to the pool.
- In a commercial environment, it can be described as an all in one replacement for clarifiers, filter aids, stain & scale magnets, and enzymes.

Sizes:

5 Litres

20 Litres

Dosage:

0.4 Litres treats 250,000 Litres pool water

1.6 Litres treats 1000,000 Litres pool water

LO-CHLOR PURA BLUE (Pool & Spa Clarifier)

Natural Water Polisher

100% Natural polymer that is totally biodegradable

Features & Benefits

- Excellent water polisher suitable for all pool and spa applications.
- Pura Blue is composed of Chitosan.
- This is a natural product made from crushed crab, lobster and prawn shells.
- Removes dissolved metals and oils from the water.
- By reducing the level of body fats and oils, it actually enhances sanitiser activity.
- Enhances filtration cycle, increasing time interval between backwash cycles.
- Can be used with all known pool and spa treatments.
- 100% bio-degradable.

Extra tips and benefits

- Chitosan is derived from crushed crab and prawn shells. It is a truly natural polymer.
- It removes body fats and suntan lotions unlike any other pool or spa clarifier
- Ideal for indoor pools and spas
- Safe to use where fish are present.
- Unlike conventional floccing agents, this product does not deposit suspended matter on the floor of the pool. Suspended matter is filtered from the pool and it accumulates on the filter pads or filter media. This matter is removed when the filter is backwashed.

Sizes

- 1L

Dosage

- 250mls treats 30,000L pool water

Did you know?

- The active constituent in Pura Blue (Chitosan) was originally used by the U.S. Navy to clear seawater for underwater photography.
- Today it is predominantly used as a fat metabolizer in medicine and it is now used widely in medical industries around the globe
- Research has found Chitosan assists in prevention of cancer



LO-CHLOR SPARKLE PILLS

Clear CLOUDY POOLS And Maintain Water Clarity

Works particularly well with SAND FILTERS

Features & Benefits

- 125g Flocculant Tablet
- Aluminium Sulphate Tablet
- Ideal for Sand Filters
- Fast dissolving
- No sticky residue
- Highly Concentrated
- Individually packaged in cloth sock

Extra benefits

- Clears cloudy pools quickly
- Maintains water clarity
- No mess
- Easy skimmer box application

Sizes

- 125g Display Pack
- 10Kg Servicemen's pack
- 45Kg Bulk Drum

Application

- Ensure pH is between 7.2 and 7.6
- Add to skimmer box while pump is running after backwashing

Dosage Rates:

- 1 tablet per 50,000 litres after every backwash
- 2 tablets for pools from 50,000 to 100,000 litres



LO-CHLOR ULTRA KLEER 2 in 1

Concentrated Clarifier & Flocculent

Excellent sand filter conditioner

Features & Benefits

- Use as an alternative floccing agent to Alum compounds.
- Whilst Ultra Klear 2 in 1 is not as strong as Alum it certainly offers advantages (no messy residue and normally no need to vacuum).
- Sand filtration systems certainly benefit from the addition of Ultra Klear 2-1.
- Effective clarifier, compatible with all types of pool systems and surfaces
- Will not affect pH balance
- Non-toxic and non-irritating
- Improves filter efficiency
- When used consistently, reduces the organic content of your pool water so that you will need to use less chlorine, bromine and algaecide

Extra tips and benefits

- Lo-Chlor Ultra Klear 2 in 1 is an excellent sand filter conditioner
- Simply pour 1L of Lo-Chlor Ultra Klear 2 in 1 directly into the skimmer and keep pump running for a minimum of 8 – 12 hours
- Fantastic results overnight.

Sizes

- 1L
- 5L
- 20L

Dosage

- Clarifier: 200ml per 50,000 litres.
- Floccing: 500ml per 50,000 litres.
- Sand Filter Aid: 1 litre poured directly into the skimmer.



What is the difference between a clarifier and a flocculent?

A clarifier is designed to be used with a filter system, so particles coagulate in the filter. A flocculent is NOT to be used with the filtration system as the filter may clog. Flocculants are formulated to drop particles to the bottom of the pool, so they can be vacuumed away.

LO-CHLOR ULTRA KLEER PLUS 4 in 1

Removes "SUNTAN LOTION", OILS & METALS

100% Natural polymer that is totally biodegradable

Features & Benefits

- Excellent pool and spa clarifier suitable for ALL applications.
- Composed of Chitosan.
- This is a natural product made from crushed crab, lobster and prawn shells.
- Removes dissolved metals and oils from the water.
- By reducing the level of body fats and oils, it actually enhances sanitiser activity.
- Enhances filtration cycle, increasing time interval between backwash cycles.
- Can be used with all known pool and spa treatments.
- 100% bio-degradable.

Extra tips and benefits

- Chitosan is derived from crushed crab and prawn shells. It is a truly natural polymer.
- It removes body fats and suntan lotions unlike any other pool or spa clarifier
- Ideal for indoor pools and spas
- Safe to use where fish are present.
- Unlike conventional floccing agents, this product does not deposit suspended matter on the floor of the pool. Suspended matter is filtered from the pool and it accumulates on the filter pads or filter media. This matter is removed when the filter is backwashed.

Sizes

- 1L
- 5L
- 20L

Dosage

- 250mls treats 30,000L pool water

Did you know?

- Environmentally safe, nontoxic and biodegradable, Lo-Chlor Ultra Kleer Plus 4 in 1 attracts the organic debris that causes cloudiness in pool, spa and hot tub water.
- A floc or mass of organic material is formed and carried to the filter, where it is more easily removed.
- Unlike synthetic, petroleum-based clarifiers, Chitosan actually removes oils from the water. This unique, patented technology works with any pool, spa or hot tub system.
- Chitosan works to encapsulate the oil molecules and holds them in suspension so the oil doesn't stick to pool and spa surfaces or filters.
- When filters are cleaned, the oil is removed in the effluent.
- The filter stays cleaner and lasts longer.



LO-CHLOR FISHPOND & AQUARIUM CLARIFIER

Natural Clarifier For FISHPONDS & AQUARIUMS

100% Natural polymer that is totally biodegradable

Features & Benefits

- Excellent clarifier suitable for ALL applications.
- Composed of Chitosan.
- This is a natural product made from crushed crab, lobster and prawn shells.
- Removes dissolved metals and oils from the water.
- 100% bio-degradable.
- Safe to use with fish and other mammals

Extra tips and benefits

- Chitosan is derived from crushed crab and prawn shells. It is a truly natural polymer.
- It clarifies the water and enhances other chemicals like no other.
- Ideal for all fishponds and aquariums
- Safe to use where fish are present.
- Unlike conventional floccing agents, this product does not deposit suspended matter on the floor of the pool. Suspended matter is filtered from the pool and it accumulates on the filter pads or filter media.

Sizes

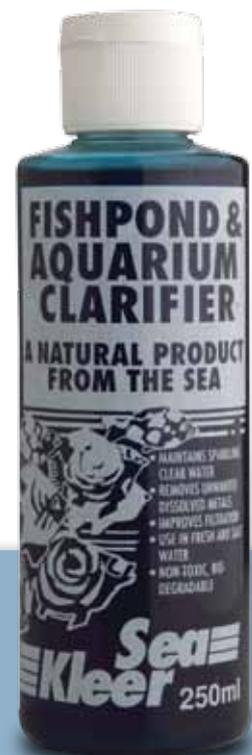
- 250mls

Dosage

- Initial Dose: 50ml per 6,000 litres water.
- Smaller Aquariums: 1ml product per 100 litres
- Goldfish Bowls: 1 or 2 drops

Did you know?

- The active constituent in LO-CHLOR FISHPOND & AQUARIUM CLARIFIER was originally used by the U.S. Navy to clear seawater for underwater photography.



maintenance and cleaning solutions

The Lo-Chlor Chemicals specialty range of Maintenance and Cleaning products is one of the most advanced and comprehensive ranges in the Australian specialty pool and spa chemical market.

It consists of manufactured and merchandise products from Australia and other parts of the world. These unique products consist of proven quality formulas.

Supplementary buy-in products of specialist chemicals are sourced both locally and internationally to fulfil the demand to be a full cleaning range.

Our suppliers recognise the Lo-Chlor Chemicals name as being one of quality and value. Our established customer base is a solid foundation to bring you the largest range of maintenance and cleaning products in the Australian pool and spa chemical market.

The Lo-Chlor Maintenance & Cleaning range consists of:

Anti-Crystallite

Aqua- Boost

Calcium Hardness Reducer

Chlorine Remover

Filter Aid & Metal Remover

Filter Cleaner & Degreaser

Instant Filter Cleaner

Hydra Slip Lubricant

Hydra Slip Lubricant Spray

Leak Sealer

Liquid Stabiliser

Sunscreen Tabs

No More Bugs

No More Ducks

Pool Sentinel

Solar Pill

Tile & Vinyl Cleaner Spray

Tile & Vinyl Wipes

LO-CHLOR ANTI CRYSTALLITE

Complex Manganese Formulation Which Is Highly Effective For
REDUCING CRYSTALLISATION

Reduces and eliminates crystallisation in liquid chlorine feed lines

Benefits

- Ideal for both commercial and domestic applications.
- Easy and economical to use.
- Compatible with all automatic liquid chlorinator systems.

Important Notes

- Add to the bulk drum when refilling. Never add to the pool.
- Do not use with any other type of chlorinating or brominating device.
- Continual use of anti-crystallite in un-balanced pools may result in staining of plastic pool fittings.
- Make sure that the water is always in balance.

Sizes

- 1L
- 5L

Dosage

- Read directions on bottle for dosage rates and instructions



A few tips from the Lo-Chlor team...

- Lo-Chlor Anti Crystallite contains a blend of potassium permanganate and other rare compounds. These metallic compounds can cause mild staining.
- If staining occurs, an addition of Lo-Chlor Multi Stain Remover followed up by Lo-Chlor Metal Solution will remove such stains within minutes.
- Do not overdose!
- Read directions on bottle for dosage rates and instructions

LO-CHLOR AQUA-BOOST

Non Chlorine SHOCK TREATMENT For Pools And Spas

Highly concentrated oxygen compound that reduces and eliminates combined chlorine levels in pools and spas.

Benefits

- Use as a non-chlorine shock for pools, spas, hot tubs, ornamental ponds and fountains.
- Excellent OXIDISER for Ionised and Nature 2 Pools and Spas.
- White, flowable powder.
- Oxidises organic contaminants.
- Used regularly – potentiates sanitiser effect.
- pH neutral – compare to similar products.
- Contains clarifying agent for sparkling clear water.

Important Notes

- Lo-Chlor Aqua-Boost is not a sanitiser and does not replace chlorine or bromine.
- Lo-Chlor Aqua-Boost can also be used in ornamental ponds and fountains.
- Unlike other non-chlorine shocks (which lower pH), Lo-Chlor Aqua-Boost does NOT affect the pH of Pool Water.
- Users should take care when using this product. Please read safety directions before use.

Sizes

- 1Kg
- 5Kg
- 20Kg

Dosage

- Read directions on bottle for dosage rates and instructions

Extra tips...

- Because Lo-Chlor Aqua-Boost has the ability to oxidise protein and other organic material it is an invaluable aid in pool and spa treatment, where shocking is required.
- A regular dose will benefit all pools and spas (we recommend this be done at least monthly). It is particularly useful in salt chlorinated pools and Ionised pools. Bathers can enter the pool 15 minutes after application.



LO-CHLOR CALCIUM HARDNESS REDUCER

Designed To LOWER CALCIUM HARDNESS LEVELS In Both Pools And Spas.

Hydroxyethylidene Diphosphonic Acid Complex

Benefits

- Reduces calcium levels to the ideal range of 200-400ppm
- It will restrain calcium scale formation on pool and spa surfaces as well as valuable equipment.
- It will restore water clarity on application.

What advantages does it have over other similar products?

- Lo-Chlor Calcium Hardness Reducer is a made with highly concentrated liquid formulation.
- It is compatible with all recognised sanitisers and other pool and spa additives
- It may be used in all types of pool and spa finishes.
- It is easy to use
- It is economical to purchase
- There is no residue so no need to vacuum pool to waste

Important Notes

An additional benefit of Lo-Chlor Calcium Hardness Reducer is that it will also chelate and keep in solution trace metals, such as iron and copper, thus aiding in the prevention of unsightly staining on pool and spa surfaces

Companion products

- Use Lo-Chlor Scale Eliminator to reduce and soften the build up of calcium scale on swimming pool and spa surfaces
- Salt chlorinator owners should use Lo-Chlor Salt Cell Protector Plus to reduce and soften deposits on salt chlorinator cells making them much easier to clean

Sizes

- 1L

Dosage

- 1L treats 50,000 litres pool water



LO-CHLOR CHLORINE REMOVER

Lowers CHLORINE AND BROMINE LEVELS In Pools And Spas

Benefits

- Reduces chlorine and bromine levels in pools and spas
- Compatible with all other pool chemicals
- Results in hours
- Highly concentrated
- Does not reduce chloramines or combined chlorine levels

Important Notes

- This product is extremely potent. For domestic swimming pools only add one capful at a time. Don't use more than indicated as achieving a chlorine level will become very difficult.
- When using in a fibre glass pool, pre-dissolve in a bucket. Direct addition of Chlorine Remover can cause staining of fibre glass surfaces when the pool water is incorrectly balanced.

Sizes

- 500g
- 1Kg
- 5Kg
- 20Kg

Dosage Table:

TO DECREASE P.P.M.	30,000 L	50,000 L	75,000 L	100,000 L
1.0 P.P.M.	30 gm	50 gm	75 gm	100 gm
2.0 P.P.M.	60 gm	100 gm	150 gm	200 gm
5.0 P.P.M.	150 gm	250 gm	375 gm	500 gm
10.0 P.P.M.	300 gm	500 gm	750 gm	1 Kg



LO-CHLOR FILTER CLEANER & DEGREASER

Strong Organic and Inorganic Compound

Proprietary blend which removes grim, organic build up and CALCIUM SCALE unlike most other filter cleaners on the market

Benefits

- 24 hour application.
- Enhances chemical performance.
- Prolongs life of filter media.
- Advanced formulations for the cleaning and degreasing of D.E. filters and cartridge filter grids.
- Also used for all types of sand filters.
- Removes grime, dead algae, oil, organic deposits as well as scale and unwanted metals.

Sizes

- 1L
- 5L

Dosage rates

Read directions for use carefully before use



Hot tips for pool professionals

- **D.E. and Cartridge Filters:** Best results will be obtained when the soiled elements are hosed before cleaning to remove as much debris as possible. Also hose well before re-assembly.
- Never add this product to pool water.
- Lo-Chlor recommend that filters be cleaned regularly.
- Sand filters at least twice a year.
- D.E. and cartridge as necessary.
- Make filter cleaning part of your regular winter shutdown maintenance program.
- Your customers will thank you.

LO-CHLOR INSTANT FILTER CLEANER

INSTANT Results, NON SOAK formulation

Proprietary blend which removes grim, organic build up and CALCIUM SCALE

Benefits

- Specially formulated for the removal oils, minerals and debris from your spa and hot tub filter.
- Supplied in a handy trigger spray its Non-Soak enables the filter to be cleaned quicker resulting in less down time of your spa and hot tub.

Sizes

- 500mls

Dosage rates

Read directions for use carefully before use



Hot tips for pool professionals

- D.E. and Cartridge Filters: Best results will be obtained when the soiled elements are hosed before cleaning to remove as much debris as possible. Also hose well before re-assembly.
- Never add this product to pool water.
- Lo-Chlor recommends that filters be cleaned regularly.
- Make filter cleaning part of your regular winter shutdown maintenance program.
- Your customers will thank you.

LO-CHLOR FILTER AID & METAL REMOVER

Natural Fibres That AID IN THE FILTRATION OF METALS From Pool Water

This unique cellulose fibre coats any filter with a gel that improves filtration drastically in a very short time

Benefits

- Lo-Chlor Filter Aid & Metal Remover is a fast acting filter aid clarifier to remove dissolved metals, dead algae and other suspended matter from pool water.
- Lo-Chlor Filter Aid & Metal Remover is a dual acting product that works within your sand, cartridge or DE filter.
- Lo-Chlor Filter Aid & Metal Remover spreads a coagulant over the sand to stop small particles passing through the media and returning to the pool.
- Lo-Chlor Filter Aid & Metal Remover is also ionically charged to attract the negatively charged debris again, preventing it from returning to the pool.

Sizes

- 300G

Dosage rates

Read directions for use carefully before use



More information about this new and exciting product...

- Enhances the efficiency of all types of pool filtration systems
- Traps minute particles of waste that would normally pass through the filter
- When used with Lo-Chlor Metal Solution, this product aids in the removal of metals such as copper, iron and manganese that would otherwise cause pool surface staining or water discolouration.

LO-CHLOR HYDRA-SLIP LUBRICANT

Highly advanced SILICONE LUBRICANT Specifically Designed For Swimming

Pool Equipment and Accessories

Benefits

- Long lasting silicone lubricant designed to protect rubber and plastic parts from wear and tear.
- Will not expand or weaken rubber parts or 'o' rings.
- Use on 'o' rings, seals, hinges, automatic pool cleaners.
- Hydra Slip repels moisture and is especially formulated for plastics and rubber parts coming in to contact with chlorinated water.
- Non staining, therefore ideal for all pool equipment.
- Great for marine uses. Many applications for boats and also used for diving equipment

Important Notes

- There are many silicone lubricants available.
- Always make sure that the product you are using has been tried and proven for swimming pool applications

Sizes

- 20g Pots
- 50g Pots
- 75g Tubes
- 500g Jars
- 1Kg Jars

Dosage

- N/A



Did you know...?

- Lo-Chlor Hydra Slip has been on the market since 1989.
- The formulation has never changed and is still the No.1 selling silicone based lubricant on the market today.

LO-CHLOR HYDRA-SLIP SPRAY

Highly advanced SILICONE LUBRICANT Specifically Designed For Swimming

Pool Equipment and Accessories

Benefits

- Long lasting silicone lubricant designed to protect rubber and plastic parts from wear and tear.
- Will not expand or weaken rubber parts or 'o' rings.
- Use on 'o' rings, seals, hinges, automatic pool cleaners.
- Hydra Slip repels moisture and is especially formulated for plastics and rubber parts coming in to contact with chlorinated water.
- Non staining, therefore ideal for all pool equipment.
- Great for marine uses. Many applications for boats and also used for diving equipment

Important Notes

- There are many silicone lubricants available.
- Always make sure that the product you are using has been tried and proven for swimming pool applications

Sizes

- 200g Aerosol spray

Dosage

- N/A

Did you know...?

- Lo-Chlor Hydra Slip has been on the market since 1989.
- The formulation has never changed and is still the No.1 selling silicone based spray on the market today.



LO-CHLOR LEAK SEALER

An advanced Liquid Formulation For **SEALING MINOR CRACKS & LEAKS** in both **PIPE WORK** and **POOL SURFACES**

Benefits

- Seals minor leaks in most swimming pools & spas
- Can seal leaks losing up to 3.5cm of water per day (in a 50K litre pool)
- No need to empty pool or spa
- Fast acting - usually stops leaks in 24 hours

Important Notes

- NOT suitable for repairing leaks in vinyl liner pools
- Larger defects require proper plumbing and maintenance
- If using an automatic pool cleaner, remove the cleaner from the pool
- Do not allow Leak Sealer to pass through filtration system
- Do not exceed recommended dosage rate

Sizes

- 1L

Dosage

- 1L treats 50,000 Litres pool water

What is Lo-Chlor Leak Sealer?

Lo-Chlor Leak Sealer is a compound that has been developed to help seal minor cracks and leaks in swimming pools. A leaking pool is every pool owner's nightmare. Lo-Chlor has developed an easy way to plug minor leaks.

How does Leak Sealer work?

Leak Sealer has a very high pH (about 12) so when you add it to your pool it takes on the pH of pool water (between 7.0 and 8.0). It now no longer functions as a liquid and starts to solidify in the presence of oxygen at the site of the leak. To ensure best results, please follow the instructions outlined below.

Did you know...?

- Lo-Chlor Leak Sealer is sold in more than 25 countries around the world
- Lo-Chlor Leak Sealer is the fastest selling and most popular specialty pool and spa chemical in Spain and France
- Lo-Chlor Chemicals distributes more than 20,000L a year of Leak Sealer to all corners of the globe.

See overleaf for directions and application rates...



LO-CHLOR LEAK SEALER (continued...)

An advanced Liquid Formulation For **SEALING MINOR CRACKS & LEAKS** in both **PIPE WORK** and **POOL SURFACES**

Instructions

1. Turn the pool pump OFF. Set the filtration to BY-PASS or RECIRCULATE to avoid the Leak Sealer passing through the filtration system elements when the pump is running. If by-pass or re-circulate is not available, remove filter grids or cartridges from the filter... Leak Sealer will clog the filter system if allowed to pass through it.
2. If leak location is unknown, add the required volume of Leak Sealer via the skimmer box. Turn the pump off for at least 30 minutes. This allows the Leak Sealer to work slowly through the pipes (this is where 90% of leaks happen, so it makes good sense to allow maximum contact time in this area). If you are sure of the location of the leak, (ex. around a light or the skimmer) pour Leak Sealer directly in the water in the vicinity of the leak.
3. Where possible, attach a vacuum hose with vacuum head resting at the deepest point in the pool (normally next to the main drain). Leak Sealer is much heavier than water, so it tends to sink quickly to the deepest point in the pool. The positioning of the vacuum head in this region will assure maximum effect of the product when the pump is turned back on.
4. After 30 minutes have passed, turn the pump on. Allow pump to run for at least 8 hours (24 if possible).
5. The pool should be checked to see if it is still losing water. Minor leaks may benefit from a second application where the leak appears to have slowed but not sealed completely from the initial application. Second application can be made within the next 24 hours.
6. Replace the filter grids or cartridges after 24 hours and resume normal filtration.



LO-CHLOR LIQUID STABILISER

FAST DISSOLVING STABILISER GIVING IMMEDIATE PROTECTION

This product has been specially formulated for swimming pools and very effectively guards them from the harsh rays of the sun. It puts an invisible blanket over the pool all year round protecting chlorine from ultraviolet light.

When used regularly LO-CHLOR LIQUID STABILISER will assist in reducing chlorine demand and consumption. Running costs will therefore be reduced.

Regular usage also improves filtration and ensures that stabiliser levels remain at the perfect level for 365 days of the year which in turn assists in keeping the pool water in perfect balance for that period.

LO-CHLOR LIQUID STABILISER is fast dissolving and there is no mixing involved. The product is simply poured either directly into the pool or via the skimmer box. It is ideal for all pool finishes.

Benefits

- Protects chlorine from the harsh rays of the sun.
- Dissolves instantly
 - Dry cyanuric acid can take 7-10 days to dissolve and start working.
- Immediate protection
 - Protects chlorine from the moment it is added.
- Easy to use
 - No messy dilutions or pre-dissolving.
- Less harsh than acid-based stabilisers
 - It is not an acid – it is a salt.
 - It has a pool friendly pH.
- Chlorine will last 6 to 10 times longer in pool water.
 - Reduces chlorine demand and consumption.
 - Reduces running costs.
- Concentrated liquid
 - 5 litres increases cya level by 35ppm in 50,000 litre pool.
- Will not harm any equipment or pool surface.
- Works efficiently in any water temperature.
- Improves filtration.
- Ensure perfect stabiliser levels 365 days of the year.

Sizes

2.5 Litre

5 Litre



SUNSCREEN TABS

Lo-Chlor Sunscreen Tabs protect chlorine from ultra violet light in the form of a uniquely designed tab.

Benefits

- Improves filtration
- Allows chlorine to work more effectively
- Reduces chlorine demand
- Unique application via the skimmer box
- No need to touch the chemical
- No mixing, fast dissolving.

Important Note

- 99.6% Cyanuric Acid
- Easy to use, pre-measured 500gm tabs.

Application

- The level of stabiliser (cyanuric acid) should be tested every 6-8 weeks depending upon rainfall
- 2 x 500gm Sunscreen Tabs per 50,000 litres will raise the cyanuric acid level by 25ppm
- Add directly to the skimmer basket and walk away
- Cyanuric acid may take up to 24 hours to dissolve completely.

Sizes

- 1kg jars.

Dosage

Dosage rates indicated are a guide only. Please refer to the label on the jar for further instructions.



LO-CHLOR NO MORE BUGS

Eliminates INSECTS From Pool Water Surface

Benefits

- A unique non-foaming formulation
- Reduces the surface tension of pool water, completely ridding the pool surface of floating insects
- With reduced surface tension insects cannot float and they sink to the bottom of the pool where they are filtered or vacuumed away.

Important Notes

- For best results, add as close as possible to problem area of pool.
- Repeat application if necessary.
- Do not add to skimmer basket.
- Insects sink to base of pool. Filter or vacuum to waste.

Sizes

- 1L

Dosage

- 1L treats 50,000L pool water



Important fact...

- Where funnel web spiders are present use Lo-Chlor No More Bugs to end their survival in your (or your customers) swimming pool.
- Lo-Chlor No More Bugs breaks the surface tension of the water
- Once the tension is broken the funnel web spider is unable to create the bubble of air that enables it to survive under water.

LO-CHLOR NO MORE DUCKS

Helps DETER DUCKS And OTHER FEATHERED FRIENDS From Swimming Pool Surfaces

Benefits

- Reduces the surface tension of the water.
- Not harmful to ducks or humans.
- Can be used in all types of pool finishes.
- Compatible with all recognised sanitisers and other pool additives.

Important Notes

- The easy way to describe how the product works to customers is to ask them if they have heard the expression “water off a ducks back”. You can then tell them that unlike water, no more ducks doesn’t fall off of their backs and this is what makes them leave the pool.
- Advise pool owners that the product may smell and foam for a short period.
- Use only when ducks are present in the pool.
- Use caution when ducklings are present.

Sizes

- 5L
- 20L

Dosage

- 5 Litres treats 50,000 litres pool water



A few facts from the professionals...

1. Lo-Chlor No More Ducks contains a proven agent, Alkyl Dimethyl Benzyl Ammonium Chloride. Not only is it a good duck repellent but it is also a very effective anti-algae treatment.
2. As the compound suggests this blend contains ammonia.
3. When added to a pool running with a salt chlorinator the ammonia occasionally reacts with the gases produced in the salt chlorinator cell causing fine bubbles to form on the surface of the pool.
4. These bubbles will dissipate as soon as the chlorinator is switched off and usually only last 5-7 days.
5. Note: High doses of quaternary ammonium compound may combine with free chlorine, resulting in excess levels of combined chlorine. This phenomenon lasts 2 or 3 days.

LO-CHLOR POOL SENTINEL

The BIOFILM remover

LO-CHLOR "POOL SENTINEL" is a revolutionary, patented water care solution that removes BIOFILM from the walls and floors of pools.

99% of all bacteria and algae spores live and thrive within the BIOFILM membrane.

LO-CHLOR "POOL SENTINEL" by removing and preventing BIOFILM

- Provides crystal clear, pure and safe bathing water
- Is environmentally friendly
- Is gentle, even to the most sensitive of skin
- Allows pool owners' to enjoy luxuriously soft pool water
- Reduces the harsh effects and odours associated with strong chemicals
- Reduces in the need for chemicals by up to 70%
- Eliminates slimy walls and calcium deposits
- Works with all pool finishes and filter types
- Needs just one simple treatment each week

JUST HOW CLEAN IS A POOL?

Everybody knows that we need to sanitise water to destroy bacteria, but at what cost to our families health and our fragile environment?

The use of traditional chemicals such as chlorine or bromine in a pool result in strong smelling water, with harsh unwanted side effects on skin, eyes, chest and even pool equipment.

On top of all this there is the additional headache of having to do the time consuming multiple daily measurements and adjustments.

Even after all of this.....

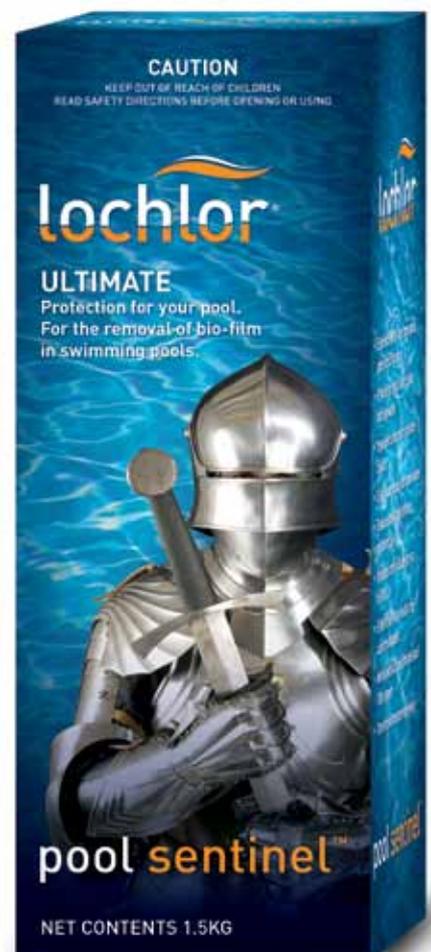
IS A POOL REALLY AS CLEAN AS POOL OWNER THINKS?

The answer is that it probably isn't even though visually they may think it is.

To understand why, you firstly need to know about the real cause of bacterial build up.

The real cause is BIOFILM.

BIOFILM is a slimy substance that lurks unseen on every surface of a pool, including the walls, ladders, grouting, linings, skimmer baskets and pumps but especially in the pipe work.



Have you ever felt slimy walls? - We bet you have!

That is BIOFILM.

For years scientists have understood that to thrive, bacteria create a layer of slime in which they shelter, feed and breed. Over time this slime increases in thickness, creating all sorts of serious additional problems.

Even high levels of chlorine or bromine can only kill bacteria in the outer layer of an established BIOFILM leaving the unharmed bacteria below to continue breeding.

In the visible world, you could liken a BIOFILM to a coral reef as the reef acts as a protective shelter as well as feeding and breeding ground for the creatures that live within.

But this is where the likeness ends as a coral reef is fragile and easily damaged whereas a BIOFILM is self-perpetuating and extremely difficult to remove.

Did you know that 99% of all bacteria live in the BIOFILM just 1% actually live in the water itself

It is only this 1% of these so called 'free floating' bacteria that we are able to kill with traditional sanitiser's such as chlorine or bromine!!

THIS IS WHERE LO-CHLOR "POOL SENTINEL" COMES INTO THE PICTURE

With just one simple weekly treatment, our patented environmentally friendly formula gets to the root of the problem by loosening this layer of slime from the surfaces.

It is then rinsed away by the action of the water and prevented from reforming.

The result is, a dramatic reduction in the levels of bacteria, needing only the minimal amount of sanitiser!

Even calcium, the notorious destroyer of pool equipment, is no match against the power of "POOL SENTINEL"

SIMPLY ADD LO-CHLOR "POOL SENTINEL" TO THE POOL WATER ONCE A WEEK

Pool Owners will really appreciate having more time to relax and enjoy their pool in a safe, soft and crystal clear water environment.

Just one dose per week

- Gives crystal clear, pure and safe bathing water
- Cleans and balances water
- Eliminates greasy water lines and slimy surfaces
- Provides a treatment that is gentle, even to the most sensitive of skin
- Eliminates foaming, calcium and scale build-up.
- Reduction the need for chemicals by up to 70%

TRADITIONAL WATER TREATMENT VERSUS LO-CHLOR "POOL SENTINEL"

Up to now, many existing water treatment systems have taken away much of the enjoyment of owning a pool.

Unfortunately, most pool owners have become accustomed to and just accepted the unpleasant smell and harsh effects associated with these chemicals as they thought that there was no alternative.

Instead of a relaxing pool experience, many people leave their pool with red watery eyes, irritated skin, discoloured swimsuits and the lingering odour of various sanitising products.

Unlike traditional water care products, LO-CHLOR "POOL SENTINEL" softens pool water and soothes skin without the harsh effects of chemicals.

LO-CHLOR "POOL SENTINEL", by breaking down the BIOFILM, completely reconditions the water and equipment, massively reducing the threat of contamination.

As a result, there's less "killing" to do, which means the need for chemicals such as chlorine or bromine can be significantly reduced.

With LO-CHLOR "POOL SENTINEL", bathing in a pool becomes a special experience.

LO-CHLOR "POOL SENTINEL" must be used in conjunction with a recognised sanitiser.

Sizes:

9 tablet pack

Dosage:

One tablet per week treats up to 50,000 litres pool water

LO-CHLOR SOLAR PILL

The FIRST Pool Blanket In A PILL

Designed to prevent pool water heat loss and evaporation

Features and Benefits

- The Solar Pill is designed to prevent pool water heat loss and evaporation
- It has been shown to be 20% more effective than other liquid blankets
- It is economical to purchase and easy to use
- It need only be applied once every month
- It has a simple to apply patented delivery system
- It has a non flammable formulation
- It forms an invisible layer of non-toxic, biodegradable film
- It gives complete surface coverage for at least 30 days
- Its efficiency will not be affected by automatic pool cleaners
- It may be used in all types of pool finishes
- It is compatible with all recognised sanitisers and other pool additives
- It comes in a most attractive counter display which is sure to demand customer attention

Extra Tips from the Lo-Chlor professionals...

- The Solar Pill comes in 2 sizes
 - Small to treat a 57,000 litre pool
 - Large to treat a 114,000 litre pool
- The pill should be placed in the skimmer basket just once a month
- Once pierced, as per the instructions, and after being placed in the skimmer basket, it will empty its contents into the pool within 6 hours
- Once the pill has emptied its contents it can be removed from the skimmer basket and simply disposed of with other household waste

Sizes

- Small (185ml) - 15 per display
- Large (390ml) - 12 per display



LO-CHLOR TILE & VINYL CLEANER

Advanced Formulation CLEANER That Can Be Used On ALL POOL SURFACES

Benefits

- Cleans grime, oil, grit and scum off swimming pool surfaces and tile lines
- Ideal for cleaning water line stains
- Does not affect water balance
- Will not cloud water
- Ideal for all domestic and commercial application
- Available in easy to use spray pack
- Removes organic deposits

Important Notes

- If using for long periods of time the Lo-Chlor team suggest you wear gloves
- Product is highly alkaline
- Use on bathroom tiles and around the house
- New formulation now more than twice as strong
- Available in bulk sizes for commercial applications

Sizes

- 750mls spray pack

Dosage

- Apply as required



A few facts from the professionals...

- Once you have removed scum marks or waterline marks from indoor pools use Lo-Chlor Ultra Klear Plus 4 in 1 to prevent the reoccurrence of such a build up.
- Unlike synthetic, petroleum-based clarifiers, Lo-Chlor Ultra Klear Plus 4 in 1 actually removes oils from the water. This unique, patented technology works with any pool, spa or hot tub system. “
- Lo-Chlor Ultra Klear Plus 4 in 1 works to encapsulate the oil molecules and holds them in suspension so the oil doesn't stick to pool and spa surfaces or filters.
- When filters are cleaned, the oil is removed in the effluent.
- The filter stays cleaner and lasts longer.

LO-CHLOR TILE & VINYL WIPES

SCRATCH FREE, abrasive wipe which can be used on ANY surface.

RE-USABLE, DISPOSABLE

Benefits

- Cleans grime, oil, grit and scum off swimming pool surfaces and tile lines
- Ideal for cleaning water line stains
- Does not affect water balance
- Will not cloud water
- Ideal for all domestic and commercial application
- Available in easy to use spray pack
- Removes organic deposits

A few extra notes...

- Scratch free abrasive wipe
- Can be used on any surface, including fibre glass & acrylic surfaces
- Ideal for:
 - Swimming pool
 - Spa / hot tub
 - Bathroom
 - Kitchen
 - Laundry
 - Boat

Sizes

- 400mls pack
- 35 wipes in each pack

Dosage

- Apply as required

A few facts from the professionals...

- Once you have removed scum marks or waterline marks from indoor pools use Lo-Chlor Ultra Klear Plus 4 in 1 to prevent the reoccurrence of such a build up.
- Unlike synthetic, petroleum-based clarifiers, Lo-Chlor Ultra Klear Plus 4 in 1 actually removes oils from the water. This unique, patented technology works with any pool, spa or hot tub system.
- Lo-Chlor Ultra Klear Plus 4 in 1 works to encapsulate the oil molecules and holds them in suspension so the oil doesn't stick to pool and spa surfaces or filters.
- When filters are cleaned, the oil is removed in the effluent.
- The filter stays cleaner and lasts longer.



The history behind STARVER®

In 1990 Dudley Mills (along with his team of research engineers) decided he wanted to seek alternative means of stopping algae growing in backyard swimming pools. It was clear that algae, like all organisms, needed nutrients to grow, could not grow in the absence of nutrients and would grow only slowly at best in nutrient poor environments. It surprised Mr Mills and his research team that, at that time, there was no commercially available product for the removal of algae nutrients from swimming pool water.

To test the idea that nutrient removal could control algal blooms, algal blooms were allowed to occur naturally in the swimming pool by ceasing preventative treatment and, when the bloom had reached the greenest state, the algae were vacuumed and filtered from the water. The intent was to use the living algae to absorb the nutrients from the water and by removing the algae from the water also remove nutrients from the water. It was found that, after each algae removal treatment, the subsequent algal blooms were slower to form and were less intense and more easily controlled by preventative treatments such as chlorine. Removal of chlorine bleached (dead) algae did not have a noticeable effect on subsequent algal blooms.

Nutrient removal using live algae demonstrated that subsequent algal blooms were considerably less intense. However, the process of algae removal was troublesome and would not be able to completely eliminate algae from the pool.

In 1993 it was decided to find a more effective and more useful method of removing algal nutrients from swimming pool water. Carbon dioxide could not be targeted as it is required in the form of bicarbonate in swimming pool water as part of the water pH buffer and would be quickly resupplied in excess of algal requirements from the air. Similarly, nitrogenous substances could not be targeted because they are added in large amount to swimming pool water and nitrogen is also available from air dissolved in pool water to some algae. Phosphorous was targeted for removal as it is an essential nutrient required in only relatively small quantities by algae and the relatively small quantities in swimming pools would make its removal manageable.

It was thought that removing phosphate, thereby reducing its concentration low enough, would cause algae to starve and die or grow only slowly as per Justus von Liebig's (1803-1873) "Law of the Minimum" which states that the growth of plants and animals is controlled by the availability of the scarcest resource.

The material used to remove phosphate needed to be a mineral so that it would not be affected by nor affect

chlorine in pool water. It needed to be safe to handle. It needed to be non-staining which eliminated iron compounds. It needed to be effective at very low concentrations of phosphate which eliminated aluminium compounds. The lanthanide compounds appeared most suitable considering that the mineral monazite is highly insoluble in neutral pH water. A provisional patent covering phosphate removal in swimming pool using

“Commercialisation of the invention, by then called Starver®, commenced with the signing by Lo-Chlor Chemicals Pty Ltd of a license agreement on 1994/November/4.”

lanthanides was applied for on 1993/February/24. The Water Resources division of CSIRO showed interest in the materials and processes by providing, at no charge, laboratory facilities and scientific oversight, their interest being engineering solutions to removing polluting phosphate from natural waters.

Experiments showed that adding soluble lanthanum compounds to pool water too often resulted in very difficult to remove fine cloudy suspensions of highly insoluble lanthanum carbonate and phosphate and that even under good conditions, removal of lanthanum precipitates from the pool water was slow and tedious.

Further experiments demonstrated that correctly formulated lanthanum mineral particles could be retained in the swimming pool filter and remove the majority of the phosphate from water pumped through the filter while not clouding the water.

Laboratory experiments and field trials made it clear that the concentration of phosphate could be practicably lowered to levels which would dramatic reduce the growth of algae and eliminate them when combined with normal chlorine treatment.

Commercialization of the invention, by then called “Starver”, commenced with the signing by Lo-Chlor Chemicals Pty Ltd of a license agreement on 1994/November/4. Commenced production started shortly thereafter.

Since November 1994 Lo-Chlor Chemicals has lead the way in the production, distribution and development of phosphate removal, phosphate testing and phosphate treatment. Starver® Pool Maintenance is now sold in more than 50 countries worldwide and is widely known as the most successful and most effective specialty pool and spa chemical to date.

This next section outlines the various phosphate removers Lo-Chlor has to offer along with the various testing methods available today.



LO-CHLOR STARVER® POOL MAINTENANCE

The ORIGINAL Patented Phosphate Remover

Designed to be used as a maintenance and preventative solution this unique formulation is highly concentrated and is safe to use with fish, mammals and in aquariums.

Benefits

- Removes phosphates (algae nutrients)
- Without phosphates, algae cannot grow
- New formulation
- Dramatically clarifies water giving instant satisfaction
- Does not cloud water (unlike other phosphate removers)
- Minimal filter pressure increase (see important notes below)
- Enhances chlorine production
- Enhances the performance of ALL other pool chemical treatments
- Compatible with all sanitisers (including Nature 2 and Ionisers)

Important Notes

- Shake container well before use
- Check filter pressure before you add Lo-Chlor Starver® Pool Maintenance
- If pressure is high, clean cartridge prior to adding Lo-Chlor Starver® Pool Maintenance
- Add directly to skimmer with filter running normally
- Can be used in freshwater/saltwater aquariums, lakes and ponds
- Safe with fish and mammals
- Non-toxic and biodegradable

Sizes

- 1L
- 2.5L
- 5L
- 20L



Where do phosphates come from?

Phosphates are organic building blocks that form when phosphoric acid reacts with various elements found in nature. Phosphates come from leaves, fertilizers, and bather wastes such as sweat and urine. Other phosphates sources are detergents, some insecticides, soft drinks, toothpaste and even some pool chemicals.

How much phosphate is too much?

As little as 0.2 ppm of phosphate can result in outbreaks. Interestingly, in cases where pools have excessive outbreaks, the test may register a very low or zero reading on the Phosphate Test Kits. This is because virtually all of the phosphate has been consumed. This phosphate is now organically bound and is not measured by the test. When outbreaks are treated (super chlorination and / or the addition of a Lo-Chlor Algaecide), this organically bound phosphate will be released into the water.

Dosage Charts

	Phosphate Level (PPM)	Number of 250mls Doses Required at 3 Day Intervals
Pools UP TO 50,000 Litres	0.3	2
	0.4	3
	0.5	4
	0.8	6
	1.0	8
	1.5	12

	Phosphate Level (PPM)	Number of 500mls Doses Required at 3 Day Intervals
Pools OVER 50,000 Litres	0.3	2
	0.4	3
	0.5	4
	0.8	6
	1.0	8
	1.5	12

LO-CHLOR BULK STARVER®

For Pools With EXTREMELY HIGH Phosphate Levels.

Initial dosing with Lo-Chlor Bulk Starver will drop phosphate level to a more manageable level for use of Starver® Pool Maintenance

Benefits

- Lo-Chlor Bulk Starver® reduces high phosphate levels to more manageable levels, inexpensively.
- One bottle of Lo-Chlor Bulk Starver® will reduce phosphate levels of up to 4000 ppb of phosphates to approximately 1000ppb in a 50,000 pool.
- Once the product has been applied the phosphates can be reduced to near zero levels with regular additions of Lo-Chlor Starver® Pool Maintenance.

Important Notes

- Lo-Chlor Bulk Starver® must be vacuumed to waste or removed from the pool with a separate vacuum.
- pH must be adjusted to 7.5 – 7.8 before applying.
- Ensure all living algae has been killed before the addition of Lo-Chlor Bulk Starver®
- Superchlorinate before use
- Follow directions for product application closely.
- Do not apply through filter

Sizes

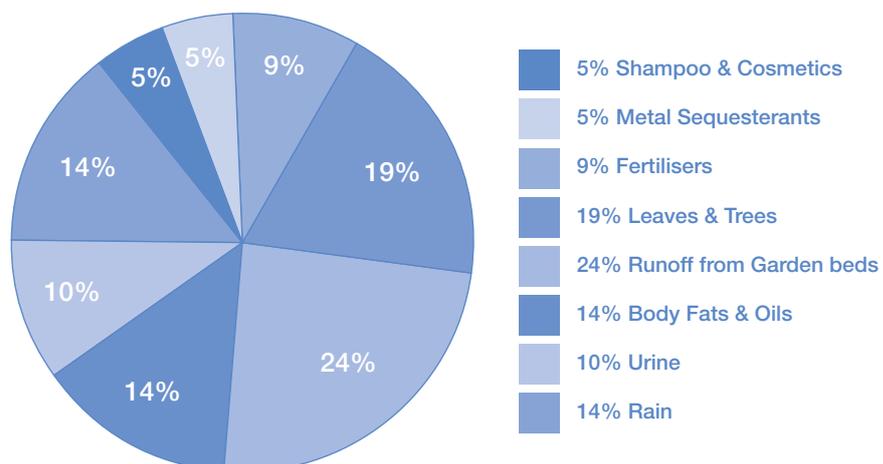
- 1L
- 20L



Where do phosphates come from?

Phosphates are organic building blocks that form when phosphoric acid reacts with various elements found in nature. Phosphates come from leaves, fertilizers, and bather wastes such as sweat and urine. Other phosphates sources are detergents, some insecticides, soft drinks, toothpaste and even some pool chemicals.

Primary sources of phosphate



PHOSPHATE TESTING

LO-CHLOR STARVER® TEST KIT

LIQUID REAGENTS For Accurate Instantaneous Results.

The kit comprises of liquid reagents to ACCURATELY TEST FOR PHOSPHATE LEVELS in swimming pools.

It contains 2 x REAGENT B and 1 x REAGENT A.

The kit is a MUST for every pool professional.

Kit contains:

1 x 25mls Reagent A

2 x 25mls Reagent B

1 x 12 mls vial

Instructions on how to test phosphates accurately

Instructions:

- Fill 12mls tube with approximately 10mls pool or spa water
- Add 5 drops Reagent A
- Add 5 drops Reagent B
- Shake well
- Compare colour against chart provided

Important Notes

- Ensure all living algae and algae spores are killed before you test for phosphates.
- If algae are present the test result will read ZERO as the algae have consumed the phosphates.
- Before testing kill algae by either Superchlorinating or using a Lo-Chlor Algaecide.
- Store kits in cool dry conditions
- Phosphate test kits have a 6 month shelf life

Important Tip

- If the test result is positive and shows a result greater than 1ppm on the test chart you will need to carry out the following steps:
 1. Fill vial with approximately 2mls pool or spa water
 2. Top up vial with approximately 8mls distilled / spring water
 3. Add reagents as per instructions
 4. Check results
 5. Multiply results by a factor of four (4x) to give accurate reading.

If phosphate level is above 10ppm you should contact your Lo-Chlor professional for further advice.



LO-CHLOR CLEAN CELL PLUS

Strong Acidic Mixture That Is SAFE And RE-USABLE.

A complex blend of phosphoric acid and non ionic surfactants.

DOES NOT CONTAIN HYDROCHLORIC ACID

Benefits

- Removed calcium build up from salt chlorinator cells
- Also removes grime and organic build up
- Does not affect precious metals on salt chlorinator cells (Unlike other harsh compounds that contain Hydrochloric Acid)
- Reusable solution
- Prolongs life of salt chlorinator cell
- Increases efficiency of salt chlorine generation
- Compatible with ALL salt chlorinators

Important Notes

- Reusable (at least 3-4 times)
- Contains acid – follow safety directions and use caution

Sizes

- 5L

Application

- Pour Lo-Chlor Clean Cell Plus into a plastic container
- Immerse the salt chlorinator cell in the plastic container for around 10 minutes
- Heavily encrusted cells may require further treatment
- Best results will be obtained when the cell is hosed in warm water before treatment

Hot Tips for professionals

- Try Lo-Chlor Clean Cell Plus for those hard to remove scum lines around the pool waterline.
- Just rub on with a damp cloth. You'll be amazed at the result
- Don't forget to wear gloves



LO-CHLOR GREEN CELL PLUS

The First NON DG, NON HAZARDOUS Cell Cleaner

A proprietary blend of renewable resources.

Benefits

- Removes calcium build up from salt chlorinator cells
- Also removes grime and organic build up
- Does not affect precious metals on salt chlorinator cells (Unlike other harsh compounds that contain Hydrochloric Acid)
- Reusable solution
- Prolongs life of salt chlorinator cell
- Increases efficiency of salt chlorine generation
- Compatible with ALL salt chlorinators
- 100% natural and totally biodegradable

Important Notes

- Reusable (at least 3-4 times)
- Non hazardous and non corrosive
- Ideal for all salt pool owners

Sizes

- 5L

Application

- Pour Green Cell Plus into a plastic container
- Immerse the salt chlorinator cell in the plastic container for around 10 minutes
- Heavily encrusted cells may require further treatment
- Best results will be obtained when the cell is hosed in warm water before treatment

Hot Tips for professionals

- Lo-Chlor Green Cell Plus is renowned for its ability to clean concrete, tiles and other porous surfaces
- Use around the house, on the garage floor, pavers, around the pool and in the house
- Totally non hazardous and bio degradable it is the perfect around the house solution



LO-CHLOR SALT CELL PROTECTOR PLUS

Calcium Inhibitor That Softens HEAVILY ENCRUSTED SALT CELLS

Benefits

- Advanced magnesium based formulation (soft compound)
- As well as limiting the build up of calcium scale on salt chlorinator cells, salt cell protector plus will soften any deposits, making them so much easier to remove.
- One treatment of Lo-Chlor Salt Cell Protector Plus will last for approximately 6 months
- Extremely economical product to use.
- Lo-Chlor Salt Cell Protector Plus increases chloride concentration in water-enhancing chlorine production.

Important Notes

- Does not contain sulphates like Epsom salts.
- These Sulphates can attack cement and grout, which will in turn deteriorate over time.
- Helps protect marble sheen and exposed aggregate surfaces from scaling.

Sizes

- 5L

Dosage

- 5L per 50,000 Litres pool water every 6 months

Did you know?

- Salt chlorination has overcome the limitations of hand-dosing through the on-site production of chlorine.
- Current estimates place salt chlorination in over 60% of all pools in Australia and New Zealand.
- Lo-Chlor Chemicals has the most advanced range of specialised salt water treatments to service all your pool and spa needs.



LO-CHLOR SCALE ELIMINATOR

Concentrated Poly Acrylate That **REDUCES AND ELIMINATES CALCIUM BUILD UP** On Pool Surfaces And Salt Water Chlorinators

Ideal for QUARTZON & EXPOSED AGGREGATE FINISHES

Benefits

- Lo-Chlor Scale Eliminator will reduce and soften the build up of scale on swimming pool surfaces.
- It will also limit the build up of calcium scale on salt chlorinator cells and will soften any deposits, making them so much easier to clean and remove.
- It will greatly improve the efficiency of your salt water chlorinator

Important Notes

- Backwash filter before using.
- Scale in swimming pools may differ from scale seen in other situations. Whilst scale has been well documented as the build up on the pool surface of insoluble salts of calcium and magnesium (carbonates and sulphates) little attention has been given to phosphates.
- The role of phosphates in swimming pools is not well understood. Calcium phosphate scale is very insoluble and difficult to remove. Far better to identify higher phosphate levels and then lower the phosphate level before difficult to remove scale forms on the pool surface.
- First test for phosphate levels using one of our test kits if you choose to.
- If the level is in excess of 0.2 ppm. it should be reduced by using Lo-Chlor Starver® Pool Maintenance.
- If the level exceeds 1.5 ppm then the pool should first be treated with Lo-Chlor Bulk Starver® and then treated with Lo-Chlor Starver® Pool Maintenance.
- Once the phosphate is at an acceptable level (less than 0.2 ppm.) then Lo-Chlor Scale Eliminator should be added.
- For persistent scale a maintenance follow up dose of Lo-Chlor Scale Eliminator is recommended.

Sizes

- 5L

Dosage rates

- Initial dose: 5L per 50,000 Litres pool water
- Maintenance Dose: 1L per 50,000 litres pool water every 2 months



LO-CHLOR CONCENTRATED SPA AND HOT TUB CLEANER

Cleans Out Pipe Work In SPA BATHS, SPA POOLS AND HOT TUBS

Highly concentrated proprietary blend

Features & Benefits

- Spa baths and hot tubs harbour undesirable body fats, oils and soaps which result in noxious odours and discoloured water. This problem is most noticeable in those baths which retain water in the pipework, even when the bath has been emptied.
- Lo-Chlor Concentrated Spa and Hot Tub Cleaner should be used regularly to eliminate these problems.
- The product is specially formulated with enhanced cleaning activity.

Extra tips & benefits

- Our new extra strength formulation removes grime, organic build up, oils, dead skin, waste and calcium scale. If used correctly, Concentrated Spa and Hot Tub Cleaner will assist in the removal of Biofilm from the system and its associated pipe work. Dosing should be carried out on a regular basis, ideally as a minimum on a twelve week basis
- Because this product contains acidic compounds, it is important that the system be fully flushed before using again.
- Regular use in commercial spa baths is recommended.

Sizes

- 500mls
- 5L

Dosage – Spa Baths

Use 50ml concentrate monthly.

Dosage – Hot Tubs / Spa Pools

250mls per 1000 litres water

Professional pool tips – MAINTAINING A HEALTHY SPA

- Body fats, oils, grime, organic matter, urine, sweat and dead skin are just some of the compounds found in the pipe work of spas and hot tubs. Along with a vast array of bacteria these compounds can result in serious health hazards if not properly treated.
- Early signs of trouble in your spa and hot tub would be the appearance of murky water returns from the jets, constant build up of scum around the surface and excess foaming.
- The NEW Concentrated Spa and Hot Tub Cleaner is a fast, economical and easy to use product that will remove all of these unpleasant by products in a matter of minutes.
- When cleaning out the pipes in a spa pool or hot tub make sure that the level of water in Spa Pool is 50mm above jets.
- Add required dosage of Concentrated Spa and Hot Tub Cleaner
- Run Spa Pool for 2 hours
- Turn off Spa Pool and allow water to stand for 1 hour
- Run Spa Pool for a further 30 minutes.
- Drain Spa Pool
- Refill with fresh water



LO-CHLOR SPA SOFT NO FOAM

HIGHLY CONCENTRATED Defoamer For Spas And Hot Tubs

Highly concentrated proprietary blend

Features & Benefits

- This effective liquid suppresses foaming and sudsing in spas, hot tubs, therapeutic pools, fountains, and pools.
- Highly concentrated formulation (2 capfuls for an average spa or hot tube)
- Totally safe and non toxic
- Compatible with all spa sanitisers and all other chemicals
- Economical and easy to use

Sizes

- 500mls
- 5L

Dosage

- 2-3 capfuls for an average size spa

Eliminating the Foam in Your Hot Tub or Spa

One of the most common difficulties expressed by hot tub and spa owners is the large amount of foam residing at the top of the water. This is a very common problem associated with hot tubs and spas, fortunately it can be easily fixed.

In order to fully understand the solution to your problem, you need to first recognize the cause for the foam in the first place. Hot tub foam can be the result of many factors. The most common cause of foam is the particles that are released from bathers when they first enter the spa. Dead skin cells, bacteria, residue from swimsuits and particles from tanning or body lotions are the most common reasons for the foam at the top of the water.

These particles, combined with the particles released during chemical applications, can result in a high amount of total dissolved solids in the water. The higher the total dissolved solids in the water, the more foam you will acquire in your hot tub.



LO-CHLOR ULTRA SPA PLUS 4 in 1

NATURAL Water Clarifier for Spas & Hot Tubs

100% Natural polymer that is totally biodegradable

Features & Benefits

- Excellent clarifier for spa & hot tub applications.
- This is a natural product made from crushed crab, lobster and prawn shells.
- Removes dissolved metals and oils from the water.
- By reducing the level of body fats and oils, it actually enhances sanitiser activity.
- Enhances filtration cycle, increasing time interval between backwash cycles.
- Can be used with all known pool and spa treatments.
- 100% bio-degradable.

Extra tips and benefits

- Ultra Spa Plus 4 in 1 is derived from crushed crab and prawn shells. It is a truly natural polymer.
- It removes body fats and suntan lotions unlike any other pool or spa clarifier
- Ideal for indoor pools and spas
- Safe to use where fish are present.
- Unlike conventional floccing agents, this product does not deposit suspended matter on the floor of the pool. Suspended matter is filtered from the pool and it accumulates on the filter pads or filter media. This matter is removed when the filter is backwashed.

Sizes

- 500mls

Dosage

100ml treats 1000 litres spa water

Did you know?

- The active constituent in Ultra Spa Plus 4 in 1 was originally used by the U.S. Navy to clear seawater for underwater photography.
- Today it is predominantly used as a fat metabolizer in medicine and it is now used widely in medical industries around the globe
- Research has found Chitosan assists in prevention of cancer



LO-CHLOR ETHEREAL SPA SOLUTIONS

Natural Under Water MOISTURISERS For Spas And Hot Tubs

Derived from the natural Papaya fruit this product is 100% natural, totally bio degradable and is ideal for all spa and hot tub owners

Features & Benefits

- 5 pleasant fragrances in the Ethereal range
- Eliminates one of the major complaints of spa users - dry skin
- Will improve the appearance and general condition of the skin

Extra benefits

- Accelerates the body's natural process of exfoliation
- Benefits are long lasting because Ethereal Spa Solutions are not an oil-based, occlusive barrier that washes off the skin
- Available in an attractive display box containing 12 bottles in a size of 250ml

Sizes

- 250mls

Dosage

- 40mls per 1000L spa water



STAINS ARE PAINS

All you need to know about metal and organic stains and most importantly – how to remove them...

Stains are a common occurrence in pools but nothing about stains is simple. There is no simple 1,2,3 for stains. What works well on one stain may not be nearly so effective on the next. No two pool owners will describe the same stain in the same way. What appears brown to one pool owner will appear green to the next.

The first rule of stain removal is to test the stain.

The second rule is never give guarantees.

What are stains?

A stain is something that alters the appearance of the pool surface to the detriment of the pool. This definition includes scale and most pool owners would indeed call scale a stain. Scale is usually coloured because of the inclusion of metals and dirt. In the strict sense scale is not a stain but a deposit of Calcium Carbonate (chalk) on the pool surface which can be recognized by the milky appearance and by the rough surface (often referred to as like sandpaper).

Stains can be the size of a hair clip or to where the whole pool surface is stained.

It is rare to find a pool that does not have stains of some description and it is a case of what the pool owner sees as beyond acceptable that determines if or when you will be called in.

What causes stains?

Introduction of metals into the water which react with Chlorine or the slightly alkaline pH to give dark coloured metal oxides which we call stains.

Metals can be introduced by:

Salt added to a salt water pool. Salt is the most common cause of stains. Usually Iron which depending on the severity gives green through yellow to brown stains or Manganese which gives dark brown to black stains.

Liquid Chlorine. Whose yellow colour is usually Iron. After continuous use for years the Iron build up can cause yellow to brown stains.

Top up water. Especially bore water which can contain Iron, Manganese or Copper.

Algaecides containing metals. May include Copper, Silver and/or Nickel, all of which give black stains.

Metal fixtures. Especially in Above Ground pools where the ladder and walls are made of cheap stainless steel which give Iron stains.

Garden dirt washed into the pool after heavy rain or hosing. May contain Iron, Manganese, Vanadium, Copper to name a few.

Black Spots in Fibreglass Pools. The Black Spots are Cobalt Oxide stains. The Cobalt comes from osmosis of the gel coat which leaches some of the Cobalt catalyst from the fibreglass (polyester) resin. Osmosis is also characterised by blisters at the site of the black spot.

Organic stains from Algae growth, leaf stains or dirt washed into the pool and left longer than a week. Usually yellow to green.

Oxidation of fibreglass or painted surfaces which give a milky or chalky appearance. Oxidation is not just the result of high Chlorine levels but high Chlorine levels combines with a low pH. The use of Trichlor Tablets which have both a high Chlorine content and a low pH need special care!

Scale deposited on the surfaces of the pool giving a chalky or milky appearance and a sandpaper like feel. Scale is caused by:

- Water out of balance from too high pH, too high Total Alkalinity, too high a Calcium level or too high T.D.S.
- Use of bore water. See separate information sheet on bore water.

Stain Removal:

Having determined what the stain is you can now set about its removal.

Removing the stain from the walls of the pool is only half the battle. The stain is still there but in solution. It is very common to remove a stain only to have it reappear after three weeks or two months.

Before any stain removal the Chlorine level in the pool must not be more than 3.0 PPM. Chlorine will neutralise the stain removers and make them less effective.

In the middle of summer it is sufficient to turn of the salt chlorinator for two days beforehand or not add any Chlorine for two days.

In winter Lo-Chlor Chlorine Remover will be necessary. 250 Grams of Lo-Chlor Chlorine Remover will remove 5.0 PPM free Chlorine in 50,000 Litres in two hours. The required amount is added to the skimmer box with the filter valve set on recirculate. Do not use excess Lo-Chlor Chlorine Remover because you will not get a Chlorine reading until all the Chlorine Remover has been neutralised.

Look for the cause:

There is nothing worse than spending time and effort in removing a stain only to have it reappear after three weeks. This is a very common scenario when using something like Citric Acid. The initial dose works well but Chlorine slowly breaks down the Iron/Citric Acid complex and the stain reappears.

Remember to look for the cause. Salt is the biggest cause of stains in pools so it is important the pool owner realises that stains are an ongoing problem in salt pools.

For more information about Stains, Stain Removal and Stain Prevention please refer to our bulletins in the back section of this catalogue.

LO-CHLOR CITRA-CLEAN

For The Removal Of BROWN IRON STAINS

Anhydrous blend of Citric acid and other inert ingredients

Features & Benefits

- Removes stains caused by iron in swimming pools
- Can be used on all surfaces
- Ideal for pools where salt stains are common

Sizes

- 1Kg

Dosage and application

- 1Kg treats 50,000 Litres pool water

Tips from the stain experts...

Iron and Manganese stain removal

- Remove Chlorine and ensure pH is 7.2 to 7.6.
- Add 1 Kg of Lo-Chlor Citra Clean, by sprinkling around the outside of the pool.
- Filter as normal.
- The stain should be gone within twelve hours.
- If in the unlikely event this does not remove all the stain, repeat with another 1 Kg.
- When the stain is gone, add 1 Litre of Lo-Chlor Metal Solution.
- Do not Superchlorinate for 10 days after adding Metal solution, or the stain will return immediately.
- It takes about 10 days to 2 weeks for Metal Solution to get rid of a stain.
- If the stain was severe it may be necessary, after stain removal, to adjust pH to 7.8 to 8.0 and add 1 Litre Lo-Chlor Maxi Flocc Plus.
- Making the pool alkaline and then floccing will remove about 70% of the dissolved metals.
- Leave overnight and then vacuum to waste.
- Balance the water and then add 1 Litre of Lo-Chlor Metal Solution.

For a salt water pool this treatment may need to be repeated every six months!



LO-CHLOR MULTI STAIN REMOVER

TRIPLE ACTION ALL PURPOSE Stain Remover

Will Remove All METALLIC & ORGANIC STAINS From Swimming Pool And Spa Surfaces

Benefits

- Removes iron, copper, manganese and rust stains
- Also removes organic stains such as algae stains, leaf stains and mould in vinyl liners
- Use as an all over treatment for stain removal or as a spot treatment

Dosage

- 1Kg treats up to 50,000 litres pool water

Available Sizes

- 1Kg
- 2Kg
- 5Kg

Important Notes

- Avoid applying Multi-Stain Remover directly to a vinyl liner or painted surface as damage may result to the pool surface
- For vinyl liner spot treatment, place Multi-Stain Remover in sock or panty hose, attach to telescopic pole and suspend over stained area
- For stains throughout a vinyl liner pool, dissolve Multi-Stain Remover in a bucket of water and pour around the perimeter of the pool
- After treatment a reduction in pH and/or total alkalinity may occur. If adding a pH adjuster (sodium bicarbonate) then do so very, very slowly.
- Raising the pH and/or total alkalinity too quickly can cause a cloudy pool as well as re-depositing the stain back on the pool surface
- Be aware that high levels of chlorine will reduce the effectiveness of Multi-Stain Remover. Ideally, reduce the chlorine level to zero before using this product

What happens when a pool interior stains?

All swimming pools interiors are made from chemical compounds of one type or another. Staining problems can start even before we commence filling the pool with water. Water is corrosive so it must be balanced by careful addition of certain chemicals. Added to this we must sanitize the water continually and re-check the balance to ensure the pool interior is not being attacked by the water itself and also to ensure that bathers are swimming in correctly treated water.

Staining occurs when insoluble chemical precipitates form in the pool. These may deposit on the pool interior and often they are hard to remove. For our purposes stains fall into two categories: Vegetable stains caused by falling leaves and other plant matter and metal stains caused by dissolved metals in the pool water.



LO-CHLOR METAL SOLUTION

Concentrated METAL SEQUESTERENT That Helps REMOVE & CONTROL Unwanted DISSOLVED METALS From Swimming Pools & Spas.

Benefits

- Sequesters and removes metals from pool water by forming complexes (chelation).
- Aides in scale removal and prevention
- Regular use will prevent the deposit of new stains and continue to reduce older metallic stains
- Excellent as a start-up for new and re-surfaced pools

Important Notes

- This product will lower pH and total alkalinity
- When readjusting, bring the pH and total alkalinity up very slowly.

Sizes

- 1L

Dosage

- 1L treats up to 50,000 Litres pool water
- Refer to directions for more detailed dosage rates and instructions

A few more facts about staining...

Organic Stains

Spot dosing with granular chlorine is the easiest way to remove stains. Care should be taken not to bleach the pool surface, particularly when treating a patterned vinyl liner. It is suggested that the chlorine be suspended near the stain (use a synthetic sock or panty hose).

Metal Stains

This is a very complex subject. Metal stains are normally caused by dissolved iron or copper. Iron stains appear as a brown or rust coloured discoloration. Copper stains appear as blue, gray or black discoloration.

Iron Staining

Occurs quite often in fibreglass pools. Traditional methods of treatment have included addition of various organic acids. These tend to alter the water balance significantly and may affect the chlorine reading on conventional test kits.



LO-CHLOR NAIL THE SCALE

Stain remover specifically designed to remove calcium scale deposits from swimming pools.

Most calcium scale forms due to high levels of calcium resulting from incorrectly balanced water

Benefits

- LO-CHLOR NAIL THE SCALE is used to remove calcium scale deposits from swimming pool surfaces.
- It contains a special blend of 3 organic acids and synthetic chelating agents.
- It is very easy and economical to use
- LO-CHLOR NAIL THE SCALE may be used in all types of pool finishes.

Additional Tips

- Use 2kg of LO-CHLOR NAIL THE SCALE per 50,000 litres of pool water.
- The product may be sprinkled over stained area or distributed around the pool.
- For best results add the product as close as possible to the stained area.
- DO NOT allow direct contact with coloured marble pool finishes or printed vinyl liners.

In these situations, place the product in a sock or stocking attached to the end of a pool broom (telescopic pole) and hold very close to the affected area without actually touching it.

- The above method is also very good to use if there is just spot, rather than widespread staining in the pool. In many instances you will be able to remove the stain(s) by solely adopting this procedure,
- Widespread staining is best treated by distributing the product over the pool surface.
- NEVER add via the skimmer basket or filter
- LO-CHLOR METAL SOLUTION must then be added immediately to prevent re-staining. The product should then be added again at regular intervals

Extra Points To Note

- LO-CHLOR NAIL THE SCALE is a strong acid mixture. When added to the pool water it will lower its pH and total alkalinity.
- Pool water must be re-balanced following use of LO-CHLOR NAIL THE SCALE,
- For severe staining, LO-CHLOR SCALE ELIMINATOR should be used regularly to inhibit calcium levels and help soften existing scale.
 - It will also aid in the prevention of future scaling on the pool surfaces
- LO-CHLOR NAIL THE SCALE may also be used in conjunction with LO-CHLOR AQUA BOOST to remove copper staining
 - Add LO-CHLOR AQUA BOOST over the discoloured area
 - When the colour change occurs wait 5 minutes and then apply LO-CHLOR NAIL THE SCALE over the same area

Sizes:

2 Kg

20 Kg

Dosage:

2kg treats 50,000 litres pool water



LO-CHLOR SPOTAWAY

For The Removal Of BLACK SPOTS IN FIBREGLASS POOLS

Otherwise known as OSMOSIS

Features & Benefits

- Will remove most stains from fibreglass pools
- Particularly effective treatment for osmosis
- Effective in removing stains and deposits caused by calcium, copper and iron
- Effective in eliminating what appear as black spots in fibreglass pools
- The black spot we are describing should NOT be confused with Black Spot Algae
- This black spot is ONLY found in fibreglass pools
- It is a reaction in fibreglass pools which produces a cobalt hydroxide accretion on the fibreglass
- This black spot may effectively be removed by the addition of Lo-Chlor Spotaway

Sizes

- 4Kg

Dosage and application

- 4Kg treats 50,000 Litres pool water

Tips from the stain experts...

Black Spot removal in fibreglass Pools:

- Remove Chlorine.
- Add 4 Kg of Lo-Chlor Spotaway and leave overnight or up to 4 days, if necessary.
- Balance water and Superchlorinate.
- After 24 hours add 1 Litre of Lo-Chlor Metal Solution.
- Note. This treatment removes the visible Black Spot but does not stop the osmosis which caused it.
- The Black Spots will reappear after three to six months.



LO-CHLOR ULTIMATE STAIN REMOVER

Remove iron, manganese or cobalt staining

Formerly known as STAIN REMOVER No.1 this revamped stain remover is the No.1 CHOICE for the treatment of IRON and / or MANGANESE stains in all pools. It is also ideal for the treatment of OSMOSIS in FIBRE-GLASS POOLS.

Benefits

- LO-CHLOR ULTIMATE STAIN REMOVER is used to remove iron, manganese or cobalt staining
- It is an excellent black spot treatment for fibre glass pools
- It is very easy and economical to use
- It may be used in all types of pool finishes
- It has no effect on pool water balance

Additional Tips

- Prior to use balance pool water.
- Ensure cyanuric acid is below 90 p.p.m. TDS less than 1200p.p.m. and pH less than 7.6. Chlorine should be zero for best results
- For best results add the product as close as possible to the stained area.
- DO NOT chlorinate for at least 24 hours after use
- DO NOT allow contact with coloured marble pool finishes.
 - In this situation, place the product in a sock or stocking attached to the end of a pool broom and hold very close to the affected area without actually touching it.
- The above method is also very good to use if there is just spot, rather than widespread staining in the pool.
 - In many instances you will be able to remove the stain(s) by solely adopting this procedure,
- Widespread staining is best treated by distributing the product over the pool surface.
- NEVER add via the skimmer basket or filter
- Immediately after treating with LO-CHLOR ULTIMATE STAIN REMOVER, LO-CHLOR METAL SOLUTION should be added to prevent re-staining.
 - This product should then be added again at regular intervals

Size:

1kg

Dosage:

1kg treats 50,000 litres pool water



THE ERASE IT® LINE by LO-CHLOR CHEMICALS

Lo-Chlor Chemicals (in conjunction with StainEraser, Inc) proudly introduces their new line of cleaning products.

Erase It® offers an alternative cleaning solution from other harsh chemicals. Erase It® products are easy to use, safe and produce instant results.

Benefits

- The **Erase It®** products contain no chemicals.
- These products will not scratch or gouge the recommended surfaces.
- They are designed for ease of use by any member of the family.
- Cleanup is a breeze.

The Erase It® product lines include the following:

Erase It® for Concrete

- Will not scratch or gouge recommended surfaces
- Will clean rust, algae, metal, leaf and many more organic and inorganic stains

Erase It® for Calcium

- Actually Works!
- Erase It® grinds the calcium from the tile without scratching while polishing tile

Erase It® for Spas & Vinyl Pools

- Will help restore sun-faded areas to new
- Will help restore dingy vinyl to new
- Will not damage vinyl or patterns

Erase It® for Tile Grout

- Will work on ANY colour grout (sanded, or un-sanded, sealed or un-sealed)
- Removes any surface stain
- Restores grout to its original colour



Training Bulletin # 1 - Algae

What is Algae?

Algae is a plant. There are around 20,000 different types of Algae in the world of which 3,000 are common to Australia.

It is possible and in fact quite common to get more than one type of Algae present in a pool at the same time.

In the swimming pool industry we commonly break the different types of Algae up into four groups:

Green - The most common group of several thousand different types. Including Green, Blue-Green and Brown.

Black - Most often called Black Spot of a dozen different types.

Mustard - a single type, so called because it resembles Mustard Powder i.e. it is a fine Yellow-Brown dust.

Pink - a single type, also known as Pink Slime or simply Red Algae.

What do Algae need to grow?

- **Sunlight** - Algae need Sunlight to photosynthesize. Which is why Algae is more prevalent in summer and why a pool covered in winter grows little Algae.
- **Nitrogen** - Like all plants Algae need Nitrogen.
- **Carbon Dioxide** - Algae photosynthesize Carbon Dioxide.
- **Phosphate** - Algae, like all living things need Phosphate.
- **Water** - Algae need water to grow but Algae spores can remain viable for weeks in a dry state. This is very important when treating Mustard Algae.

What causes Algae to grow in Pools?

- **Algae spores are always present in the air** - The everyday management of a swimming pool includes preventing these Algae spores from germinating. Algae prevention is a daily business.
- **Low Chlorine level** - If the Free Chlorine level has been allowed to drop below 3.0 PPM in Summer, for what ever reason, then Algae will grow.
- **High pH** - Algae prefer high pH. It should also be remembered that Chlorine is much less effective at high pH. High pH is the single biggest cause of pool problems today!
- **Poor Water Circulation** - Algae grow where the circulation is poor. On the steps, in the corners, in cracks and crevices and between the pebbles in pebble pools.
- **Lack of brushing** - In all pool handovers the owner is told to brush the walls and bottom of the pool, every week. How many pool owners do you know do this? Most types of Algae need a surface to cling to; a good brush will prevent this.
- **No Superchlorination** - Superchlorination is the addition of a three times the daily dose of Chlorine to the pool every two weeks. The main function for this is to burn out Chloramines (Ammonia compounds), which provide Nitrogen for algae growth, use up Free Chlorine and are not good sanitisers. An added benefit of Superchlorination is that this high level of Chlorine kills Algae spores. The introduction of salt

water chlorinators means that these days Superchlorination is rarely done.

- **High Phosphate** - Even if the Free Chlorine level and water balance are OK a high Phosphate level will encourage Algae to grow. To rectify this either use Starver to remove Phosphate (see Starver in the chemical treatment section) or if the Phosphate level is above 5.0ppm empty the pool and refill with fresh water.

Look for the cause...

If all you do is treat the Algae infestation and not the underlying cause the Algae will keep reappearing at three weekly intervals until the pool owner goes elsewhere!

- **Poor Water Circulation**

It may be as simple as redirecting the eyeball return so water is directed over the area where Algae is prone to grow. It might be that the cartridge is old and needs replacing or the sand needs cleaning with a Lo-Chlor Filter Cleaner & Degreaser. The pressure gauge will be your guide. For above ground pools the simplest of test is to put your hand over the eyeball and feel the pressure.

There is no substitute for poor filtration equipment. If the equipment is simply inadequate (i.e. too small) the only way out is to increase the daily dose of Chlorine or hand dose with Liquid Chlorine. If they have a Salt Chlorinator use a three monthly dose of Lo-Chlor Pool Algaecide as a preventative.

- **Low Chlorine Levels**

The commonest cause of low Free Chlorine is not running the Salt Chlorinator long enough, or simply not adding enough Chlorine in the daily dose or leaving the pH too high. The output from the Chlorinator will vary depending on the size, the age and how long it is run. From new it should only be necessary to run the unit a maximum of eight hours a day to give good Free Chlorine levels but as the unit gets older it will be necessary to run longer until the unit is three years old [the average life of a cell] when a new cell is probably required.

If a new Salt Chlorinator cannot maintain a free chlorine level of 3.0ppm in eight hours running, the unit was not big enough for the pool in the first place and it will be necessary to run ten or twelve hours a day or add Three Monthly doses of Lo-Chlor Pool Algaecide. A good check on Chlorine production is to measure Free Chlorine levels at the return eyeball when the level should exceed 2.0ppm.

- **High pH**

With the increase in Salt Chlorinators, high pH has become the single biggest reason for Algae infestations; because of course Chlorine is much less effective at high pH. At pH 8.0 Chlorine is only 20% as effective as at pH 7.2. How often do you find a pool that has NOT got a pH over 8.0?

A 50,000 Litre needs Acid every week. Salt Chlorinators make Alkali as well as Chlorine so need more Acid than Granular or Liquid Chlorine pools. The average dose of Acid is 500mLs per week but it is not uncommon for them to need up to a Litre.

Algae survive better at high pH and Chlorine is more effective at low pH. Lo-Chlor Pool Algaecide is effective over a wide range of pH unlike many Copper based Algaecides which are insoluble over pH 7.0.

Chemical Treatment of Algae

There are four fundamental rules to treating Algae:

1. The more Algae—the more Chlorine or Algaecide will be required.
2. The lower the pH the better (chlorine works better at low pH) but remember that people should not swim below pH 6.8.
3. The more brushing—the better, especially for Black Spot Algae.
4. The longer the Algae has been present—the longer it will take to kill it.

Up to a week for Green Algae that has been there for three or four months and up to a month for Black Spot that has been there for eight to twelve months. Making the Pool Owner aware of this might save argument later.

Green Algae

Light Algae infestation

Characteristics

a small amount of Algae present on the steps or where the walls and floors meet

Treatment:

With pump running Superchlorinate with a three times daily dose of Liquid Chlorine, followed by a thorough brush and a dose of Lo-Chlor Pool Algaecide. Remember to balance the pool water and check Phosphate levels and treat with Lo-Chlor Starver Pool Maintenance if necessary.



Medium Algae Infestation

Characteristics - Patches of Algae on floor and/or walls.

Treatment:

- With pump running add 20 Litres of Liquid Chlorine [19 Litres around the pool and 1 Litre directly into the skimmer to sterilize the Filter] per 50,000 Litres of pool water. Chlorine is used for initial treatment because it is very fast acting, 2 hours versus 2 days for Algaecides. Any Chlorine can be used but Liquid is cheaper.
- Add 1 Litre of Hydrochloric Acid per 50,000 Litres of pool water, to neutralise the Alkalinity just added with the Liquid Chlorine. If the pH of the pool was high before adding the Chlorine add correspondingly more Acid. Chlorine is most effective at pH 7.2 to 7.6.
- Brush floor and walls thoroughly paying particular attention to the steps and where the walls and floor meet.
- The Chlorine will bleach the green colour out of the Algae so the pool will start to look better within 2 hours. If after 2 hours the pool still has a green colour; add more Chlorine until the green has disappeared.

- Preferably next day but if you are sure all the Algae is dead, after 2 hours; check Phosphate level and add requisite amount of Lo-Chlor Starver Pool Maintenance then add a dose of Lo-Chlor Miraclear Clarifier to coagulate the fine Algae particles. Dead Algae is very fine and tends to go straight through a Sand or Cartridge Filter.
- Continue filtering for 12 hours and turn the pump off. Most of the Algae will have been filtered out during the 12 hours.
- If there is any residue present vacuum to waste, if possible, or to filter if not.
- Add a dose of Lo-Chlor Pool Algaecide to ensure that any Algae spores left do not re-infest the pool for the next three months giving the pool owner cause to blame you or go elsewhere!
- Some Algae spores are resistant to 40 ppm free Chlorine, the only way to ensure an Algae free pool for the next three months is to use Lo-Chlor Pool Algaecide.
- Balance the pool water and make sure pool owner brings a water sample in every two weeks to check the Phosphate level and keep the pH under control.

Heavy Algae Infestation

Characteristics - Thick Algae present on all the walls and floor all the way up to being unable to see the bottom of the pool or at times even the top step. Often as a result of the pool being left untouched over Winter.

Treatment:

- If the pool has been untreated over Winter there may be a lot of leaves, twigs, Cane Toads etc. in the bottom so it will be necessary to rake the bottom before treatment.
- With the pump running add 50 Litres of Liquid Chlorine per 50,000 Litres of pool water. The Chlorine will bleach the colour out of the Algae leaving the pool cloudy grey.
- Add 2 Litres of Hydrochloric Acid to neutralise the alkalinity of the Liquid Chlorine just added.
- Brush floor and walls thoroughly.
- Check that there is no Green colour left in the pool. Very heavy Algae infestations often take more than 50 Litres of Liquid Chlorine, often 50 or 60 Litres or more. A pool that has been left over winter may well take 100 Litres! You will know when you have added enough Chlorine, because there will be no green colour left in the water.
- Remember to add 2 Litres of Hydrochloric Acid for every 20 Litres of Liquid Chlorine added, to neutralise the alkalinity.
- Top the pool up to the rim with water.
- Turn off the pump and add 1 Litre of Lo-Chlor Maxifloc Plus diluted into several buckets of pool water. Lo-Chlor Maxifloc Plus is pH neutral so you do not need to add Soda Ash as with granular Pool Floc or Alum.
- The easiest way to add the Lo-Chlor Maxifloc Plus is with the Filter on recirculate. Turn on the pump and leave running for 2 hours. (A pool with a cartridge filter is best mixed by taking out the cartridge).
- Leave the pump off overnight.
- The following day, vacuum to waste.
- Sterilize the Cartridge or D.E. septum by soaking for at least 2 hours in a strong Chlorine solution [1:20].
- For Sand Filters pour 2 litres of Liquid Chlorine into the skimmer box, count to three and turn off the pump and leave off overnight.
- Sterilize any other pool equipment e.g. the pool hose that may be full of live Algae.
- Finally add a dose of Lo-Chlor Pool Algaecide as a three month preventative.

Black Spot Algae

Before chemical treatment it is essential to determine - How many Black Spots there are; a few hundred, black patches 10 cm across, black patches a metre across. For the average pool owner this will be a wild guess but it is important that you add enough Lo-Chlor Tropical Pool Algaecide to kill all the Black Spot. If you only kill half, the spots those remaining will multiply, so that in two weeks the pool will look the same as before treatment.

The most common complaint we hear is “your Algaecide did not work” when, in fact the pool owner did not add enough Algaecide to kill all the Algae present or expects results within the same day.

How long has the Black Spot been present. - A fortnight, it may take a week, a month - it may take two weeks, three months, it may take a month, six months or more, it may take a couple of months. If the Algaecide used is a short term Quat it may be biodegraded before all the Black Spot is killed.

Will the pool owner brush every Black Spot?

Black Spots have a waxy coating, which needs to be broken through, before the Algaecide can work. The alternatives are to use a stainless steel Algae brush or use an Algaecide that contains a detergent to dissolve the waxy coating such as Lo-Chlor Tropical Pool Algaecide or if no Copper is wanted Lo-Chlor Algae Knockout.

For very bad Black Spot it is also useful to lower pH which aids in removing the waxy coating.

Black Spots also have a root which grows into the Marblesheen, pebble grout or tile grout which is why if the Black Spot has been there a long time it may take weeks to kill it. Even after water blasting or acid washing the roots will not be killed so an Algaecide is essential. Check phosphate level and add Lo-Chlor Starver Pool Maintenance as necessary.

Light Algae Infestation

Characteristics - A few individual Black Spots.

Treatment:

- Add a dose of Lo-Chlor Black Spot Killer and brush every Black Spot.
- Check Phosphate level and add Lo-Chlor Starver Pool Maintenance, as necessary.

Medium Algae Infestation

Characteristics - A few hundred Black Spots.

Treatment:

- Add a dose of Lo-Chlor Tropical Pool Algaecide.
- If the Black Spots have been there for a long time a second dose may be necessary after three weeks. Do not be afraid of too high a Copper level. Some of the Lo-Chlor Tropical Pool Algaecide is used up killing the Black Spot.
- A better kill is obtained if a second dose is added after two weeks than if a double dose is added at the start. Check Phosphate level and add Lo-Chlor Starver Pool Maintenance, as necessary.

Heavy Algae Infestation

Characteristics - Several Black Patches 10cm across, in pebble pools.

Treatment:

- Adjust pH to 7.0 It is not necessary to close the pool down for treatment.
- Add a dose of Lo-Chlor Tropical Pool Algaecide.
- Maintain the pH at 7.2 religiously for the next two weeks.
- If the Black Spot has been there longer than a month, a second dose may be necessary. The easiest way to determine if a second dose is required is to say to the pool owner “bring a water sample back in two weeks”. When they return make sure the pH is 7.2 and ask if all the Black Spot is gone. If not a second dose is required. Approximately 50% of pools need a second dose!
- When the pool is clear of Algae add a dose of Lo-Chlor Pool Algaecide to ensure the Algae does not return. Check Phosphate level and add Lo-Chlor Starver Pool Maintenance, as necessary.

Very Heavy Algae Infestation

Characteristics - Many Black patches up to a metre across or thousands of Black Spots.

Treatment:

- Do not allow swimming during treatment. (a week or two).
- Add 5 litres of Hydrochloric Acid per 50,000 Litres of pool water, diluted 1:10 with pool water, into the skimmer with the filter on recirculate and run pump for two hours, to thoroughly mix. Turn off pump and sprinkle 2 Kg of Lo-Chlor Black Spot 900 Algaecide over the Black patches and then leave overnight.
- Brush thoroughly with a pool broom.
- Next day turn on the pump and add a dose of Lo-Chlor Tropical Pool Algaecide, poured around the edge of the pool.
- Run the pump as normal.
- After seven days adjust pH to 7.2 with Buffer or Soda Ash and add a dose of Lo-Chlor Maxi Floc Plus to floc all the suspended solids from the pool.
- Next day vacuum to waste.
- Turn filter back to filter or run.
- If any Black Spot is still present add a second dose of Lo-Chlor Tropical Pool Algaecide.
- Balance pool water
- Add a dose of Lo-Chlor Pool Algaecide as a three-month Algae preventative.
- Check Phosphate level and add Lo-Chlor Starver Pool Maintenance, as necessary.

Mustard Algae

Characteristics - Fine yellow-brown dust easily brushed from floor and wall of the pool. When brushed, the dust disappears for 24 hours but returns to the same place. The yellow brown dust occurs in patches, metres across the floor. (not in 50 cm size patches). While Mustard Algae is fairly easy to kill its spores remain viable, dry, for months so the pool is continually exposed to live spores.

The problem with Mustard Algae which gives it its fearsome reputation is preventing further infestations.

Treatment:

- Lower pH to 7.2.
- Add a dose of Lo-Chlor Algae Knockout.
- Brush walls and floor thoroughly.
- Add a dose of Lo-Chlor Miraclear Clarifier and filter for 12 hours then turn off the pump.
- Vacuum any residue to waste.
- Sterilise filter. For a sand filter add 2 litres of Liquid Chlorine into the filter via the inlet quick connector. (If this is not possible add the Chlorine into the skimmer with the pump running and count to three and turn off the pump). For cartridge and D.E. soak overnight in a 1:10 Liquid Chlorine solution.
- Sterilise hose, vacuum head, pool toys and anything else that has been in the pool, by soaking in 1:20 Liquid Chlorine solution for at least 2 hours. Wash all bathers.
- Add a dose of Lo-Chlor Pool Algaecide as a preventative.
- Check Phosphate level and add Lo-Chlor Starver Pool Maintenance to remove Phosphate as necessary.
- Maintain Free Chlorine levels at 3.0ppm and pH at 7.2 to 7.6 for the next month. No excuses!

Pink Algae

Characteristics - Pink to bright red filaments, slimy and sticky to the touch. May form clumps of the so called "pink Slime". Often forms inside pool light, pool ladder or filter. More prevalent in vinyl and fibreglass pools. More common in the tropics. It is easily brushed off the walls but like Mustard Algae the problem is in re-infestation.

Treatment:

- Make the pH 7.2. Add a dose of Lo-Chlor Algae Knockout.
- Brush walls and floor thoroughly.
- Add a dose of Lo-Chlor Miraclear Clarifier, to assist filtration.
- Sterilise filter as in Mustard Algae paying particular attention to pool light, ladder and main drain.
- Add a dose of Lo-Chlor Pool Algaecide as a three month preventative.
- Check Phosphate level and add Lo-Chlor Starver Pool Maintenance to remove phosphate, as necessary.
- Maintain Free Chlorine level at 3.0 PPM and pH 7.2 to 7.6. for the next month. No excuses.

Training Bulletin # 2 – Cloudy Water

What is Cloudy Water?

Water containing fine particles that reflect back the light.

The particles are held in suspension by static electric charges which repel one another. The particles are from 0.5 to 5.0 Micrometers in diameter and are too small to be filtered out by a sand or cartridge filter. A Diatomaceous Earth (D.E.) filter will filter fine enough to remove these particles so a D.E. filtered pool rarely has a cloudy water problem.

Particles that cause cloudy water can be from any number of sources such as Algae, Suntan Lotion, Body Fats, Skin Proteins, Sand, Pollen, Earth, Granular Calcium Hypochlorite and Calcium Carbonate.



What Causes Cloudy Water?

- High pH: Which causes Calcium Carbonate to come out of solution. The pool takes on a milky appearance.
- Algae. The start of an Algae infestation. In the early stages the pool may just seem hazy but after a day or two the familiar green colour develops
- Heavy Bather Load. Which in reality is a mixture of suntan lotion, body fats and skin proteins. All these products react with Chlorine to form insoluble compounds which have to be filtered out. Swimmers add significantly to the cloudiness of pool water. We have all seen how a pool that is crystal clear in the morning will be quite hazy at the end of a days swimming.
- Insufficient filtration time. Pool filtration systems are sized so as to give a complete pool water turnover in eight hours. It follows that all pools need eight hours filtration every day. It is also possible that filtration equipment too small for the pool has been fitted.
- When the backyard washes into the pool after a thunderstorm. A regular occurrence for some pool owners and a nightmare for others. When rain water washes over garden beds before emptying into the pool it collects a variety of chemicals which effect the pool including detergents, nitrates, phosphates, metals that can stain, Algae spores, as well as assorted cigarette ends, plastic bags and doggie do doos.

How Cloudy is the Water?

In order to recommend the correct treatment it is essential to find out how cloudy the water is.

As a guide use:

- Hazy. Pool Water has lost its sparkle.
- Cloudy. Pool Water no longer clear but pool owner is able to see the bottom in the shallow end.
- Very Cloudy. Unable to see the bottom of the pool

Chemical Treatment.

A Clarifier is a chemical that coagulates fine particles together which then are filtered out. A Flocculant is a chemical that coagulates fine particles together, which when the pump is turned off, fall to the floor of the pool under gravity and are then vacuumed to filter or to waste.

Before chemical treatment it should be noted that dose rates for Clarifiers and flocculants are important. Overdosing of chemicals will not improve the clarity faster nor will twice the dose clear twice as much cloudiness.

In fact overdosing can make matters worse, especially with products containing Alum.

Clarifiers and Flocculants work by neutralising the positive electric charge on the particles which then clump together and are either filtered out or fall to the floor. Too much Clarifier or Flocculant can reverse the charge on the particles making it much harder to filter them out.

All Clarifiers and flocculants work in 24 hours or less. Lo-Chlor Pura Blue and Ultra Klear Plus 4 in 1 work in under 4 hours, so if a pool owner wants to use more, it is better to use single measured doses every day rather than a large dose once only.

It takes about 2 hours to thoroughly mix in a dose of Clarifier or Flocculant.

Treatment for Hazy Water:

- Adjust pH to 7.2 to 7.6.
- With pump running add a single dose of either:
 - Lo-Chlor Pura Blue Clarifier
 - Lo-Chlor Ultra Klear 2 in 1 or
 - Lo-Chlor Ultra Klear Plus 4 in 1
- Continue filtering until clear, usually less than 12 hours.
- Note: Lo-Chlor Ultra Klear 4 in 1 is recommended for haziness caused by high bathing load.

Treatment for Cloudy Water:

- Adjust pH to 7.2 to 7.6.
- With pump running...
- For a cartridge filter that does not have a waste line add a clarifier dose of Lo-Chlor Ultra Klear 2 in 1 and filter for 12 hours or until clear. The actual time will depend on how good the cartridge is, if it is very old and has been cleaned a lot, the time will be increased.
- For a sand filter add a clarifier dose of Lo-Chlor Ultra Klear 2 in 1 or Ultra Klear Plus 4 in 1 and filter for 8 hours and turn off the pump. Allow any particles not filtered out to settle to the bottom overnight. Vacuum any residue to filter or to waste.
- Note: If the cloudiness was caused by the start of an Algae infestation it will be necessary to perform an Algae treatment otherwise the cloudiness will return in 24 hours and get worse.

Very Cloudy Water.

- Top up the pool to the coping. (vacuuming to waste loses 75 to 100 cm of water)
- Adjust pH to 7.8 (this gives the most compact floc that will not fluff up as the pool vacuum is pushed through it.)
- With filter on recirculate (or if a cartridge filter, take out the cartridge)
- Add the required dose of Lo-Chlor Maxi Floc Plus. (Maxi Floc is Alum in liquid form which has the advantage of being pH neutral. If using granular Alum also add 2 Kg of Soda Ash or 4 Kg of Buffer either through the skimmer on recirculate or dissolved in several buckets of pool water.)
- After 2 hours turn off the pump.
- Leave stand overnight.
- In the morning vacuum to waste. If after vacuuming the water is still cloudy leave the pump off a further 24 hours and vacuum to waste the next day.

- **Note 1...**

Alum or Pool Floc must never be filtered through a D.E. or Cartridge filter. The Alum will immediately clog the pores of the filter and probably mean a new D.E. septum or Cartridge.

- **Note 2...**

If the pool has not settled overnight there is something wrong. First check the pH is between 7 and 8.2. If not adjust using Soda Ash dissolved in a watering can of pool water and broadcast over the pool.

If pH is OK add 20 Litres of Liquid Chlorine by watering can.

In both cases leave the pump off overnight and vacuum to waste in the morning.

- **Note 3...**

If the pool was cloudy with Algae, the floc treatment must be followed by an Algae treatment.

Training Bulletin # 3

Staining

All you need to know about metal and organic stains and most importantly – how to remove them...

Stains are a common occurrence in pools but nothing about stains is simple. There is no simple 1,2,3 for stains. What works well on one stain may not be nearly so effective on the next. No two pool owners will describe the same stain in the same way. What appears brown to one pool owner will appear green to the next.

- The first rule of stain removal is to test the stain.
- The second rule is never give guarantees.

What are stains?

A stain is something that alters the appearance of the pool surface to the detriment of the pool. This definition includes scale and most pool owners would indeed call scale a stain. Scale is usually coloured because of the inclusion of metals and dirt. In the strict sense scale is not a stain but a deposit of Calcium Carbonate (chalk) on the pool surface which can be recognized by the milky appearance and by the rough surface (often referred to as like sandpaper).

Stains can be the size of a hair clip or to where the whole pool surface is stained.

It is rare to find a pool that does not have stains of some description and it is a case of what the pool owner sees as beyond acceptable that determines if or when you will be called in.

What causes stains?

Stains are primarily caused by the introduction of metals into the water which react with Chlorine or the slightly alkaline pH to give dark coloured metal oxides which we call stains.

Metals can be introduced by:

Salt added to a salt water pool - Salt is the most common cause of stains. Usually Iron which depending on the severity gives green through yellow to brown stains or Manganese which gives dark brown to black stains.

Liquid Chlorine - Whose yellow colour is usually Iron. After continuous use for years the Iron build up can cause yellow to brown stains.

Top up water - Especially bore water which can contain Iron, Manganese or Copper.

Algaecides containing metals - May include Copper, Silver and/or Nickel, all of which give black stains.

Metal fixtures - Especially in Above Ground pools where the ladder and walls are made of cheap stainless steel which give Iron stains.

Garden dirt - Washed into the pool after heavy rain or hosing. May contain Iron, Manganese, Vanadium, Copper to name a few.

Black Spots in Fibreglass Pools - The Black Spots are Cobalt Oxide stains. The Cobalt comes from osmosis of the gel coat which leaches some of the Cobalt catalyst from the fibreglass (polyester) resin. Osmosis is also characterised by blisters at the site of the black spot.

Organic stains - From Algae growth, leaf stains or dirt washed into the pool and left longer than a week. Usually yellow to green.

Oxidation - Of fibreglass or painted surfaces which give a milky or chalky appearance. Oxidation is not just the result of high Chlorine levels but high Chlorine levels combines with a low pH. The use of Trichlor Tablets which have both a high Chlorine content and a low pH need special care!

Scale - Deposited on the surfaces of the pool giving a chalky or milky appearance and a sandpaper like feel. Scale is caused by:

- Water out of balance from too high pH, too high Total Alkalinity, too high a Calcium level or too high T.D.S.
- Use of bore water. See separate information sheet on bore water.

Look for the cause:

There is nothing worse than spending time and effort in removing a stain only to have it reappear after three weeks. This is a very common scenario when using something like Citric Acid. The initial dose works well but Chlorine slowly breaks down the Iron/Citric Acid complex and the stain reappears.

Remember to look for the cause. Salt is the biggest cause of stains in pools so it is important the pool owner realises that stains are an ongoing problem in salt pools.

Testing the stain

Testing the stain will determine what caused it so you can prevent it, what the stain is made of and how long it will take to remove or if it is possible to remove the stain completely.

The first step in testing the stain is to discuss with the pool owner what they have added recently which may have caused the stain. Usually a pool owner will have some clue as to how the stain formed.

- Was it after adding salt?
- A Copper based Algaecide?
- Do they have an Ioniser?
- Do they have a leaf problem and leave the leaves sit in the pool for weeks?
- Has there been a storm and dirt been washed into the pool?
- How long has the stain been there? Have they tried anything themselves?

Stains broadly fall into four categories:

1. Organic stains:

Most commonly leaf stains, where a leaf has been allowed to sit in one place for weeks and Algae stains where the pool was allowed to stay green for weeks. Dirt also gives rise to organic stains. Dirt can be washed in the pool after a storm or if the hydrostatic valve operates and dirty water enters the pool (characterised by a discoloured ring around the main drain).

The most common colours are yellow, green and brown.

2. Metal stains:

Most commonly Iron which gives yellow through to brown stains and Black Spots in Fibreglass pools which are Cobalt stains.

3. Oxidation of fibreglass and painted surfaces

4. Scale

The Test:

Testing for Iron, Manganese, Cobalt, Silver , Organic stains and Scale:

Place a handful of Lo-Chlor Multi Stain Remover in a skimmer sock and use the pool broom to put pressure on the sock. The skimmer sock is then wiped, in a straight line; backwards and forwards through the stain. It is best to pick the worst part of the stains.

Iron stains and Organic stains are removed instantly leaving a clear stripe.

A Manganese stain is removed within two minutes.

Black Spot in fibreglass pools is also removed in two minutes.

Finally a Copper or Silver stain is removed within five minutes.

Scale may be lifted a little by this test and the original colour of the pool may show through. The result depends on how thick (how long it's been there) the scale is.

Testing specifically for Copper:

A handful of Lo-Chlor Nail the Scale is put into a skimmer sock, and using the pool broom; the test repeated.

A Copper stain is removed within two minutes provided the stain has been there less than one month.

Note: You cannot test vinyl surfaces this way. There is a risk of the acidity of the Nail the Scale, bleaching the vinyl.

Copper is absorbed into the surface over time so it is important to get to the stain as fast as possible. After one month there is little hope for a marblesheen or pebble surface and the pool must be emptied and acid washed.

After six months the Copper is absorbed so far into the surface that an acid wash may only remove the surface stain and the stain may re-appear after a period of time.

Do not give guarantees with Copper stains!

Testing for organic stains:

A handful of granular Chlorine is put into a skimmer sock and the test repeated. If there is no effect within a minute let the sock sit in one place for three minutes.

Organic stains are removed within three minutes.

Stain Removal:

Having determined what the stain is you can now set about its removal.

Removing the stain from the walls of the pool is only half the battle. The stain is still there but in solution. It is very common to remove a stain only to have it reappear after three weeks or two months.

Before any stain removal the Chlorine level in the pool must not be more than 3.0 PPM. Chlorine will neutralise the stain removers and make them less effective.

In the middle of summer it is sufficient to turn of the salt chlorinator for two days beforehand or not add any Chlorine for two days.

In winter Lo-Chlor Chlorine Remover will be necessary. 250 Grams of Lo-Chlor Chlorine Remover will remove 5.0 PPM free Chlorine in 50,000 Litres in two hours. The required amount is added to the skimmer box with the filter valve set on recirculate. Do not use excess Lo-Chlor Chlorine Remover because you will not get a Chlorine reading until all the Chlorine Remover has been neutralised.

Treating Iron and Manganese Stains:

- Remove Chlorine and ensure pH is 7.2 to 7.6.
- Add 1 Kg of Lo-Chlor Multi Stain Remover, by sprinkling around the outside of the pool.
- Filter as normal.
- The stain should be gone within twelve hours. If in the unlikely event this does not remove all the stain, repeat with another 1 Kg.
- When the stain is gone, add 300mls of Lo-Chlor Metal Solution
- Run the filter for 12 – 24 hours
- Backwash (for Sand Filters) or clean cartridges thoroughly
- Repeat this treatment of Lo-Chlor Metal Solution every 3 days until the bottle is empty
- Do not superchlorinate for 10 days after adding Metal solution, or the stain will return immediately.
- If the stain was severe it may be necessary, after stain removal, to adjust pH to 7.8 to 8.0 and add 1 Litre Lo-Chlor Maxi Floc Plus.
- Making the pool alkaline and then floccing will remove about 70% of the dissolved metals.
- Leave overnight and then vacuum to waste.
- Balance the water and then add 1 Litre of Lo-Chlor Metal Solution.
- For a salt water pool this treatment may need to be repeated every six months!

The common Metal Stain...

Iron / Manganese in a Fibreglass pool

Treating Copper Stains:

The longer the Copper stain has been there the longer it will take to remove it. Chlorine level must not be more than 3.0 PPM.

- Adjust pH to 6.8 to 7.2.
- Add 2 Kg of Lo-Chlor Nail the Scale, by sprinkling it around the edge of the pool.
- Filter as normal.
- Observe the pool each day to determine when Copper removal is complete.
- It is acceptable to add another 2 Kg of Lo-Chlor Nail the Scale after two days if stain removal is progressing, but not fast enough.
- When satisfied by Copper removal, adjust pH to 7.8.to 8.0 with Soda Ash.
- Add 1 Litre Lo-Chlor Maxi Floc Plus and turn off the pump.
- Leave off overnight and next day vacuum to waste.
- This is to remove the excess Copper, now in solution, from the treatment.
- Balance the water and add 1 Litre of Lo-Chlor Metal Solution.

Note 1:

If the stain has been there more than a month, for a vinyl pool, the only way is to add 500mls Lo-Chlor Metal Solution every week for 6 weeks. The stain will take at least 12 weeks to fade. It may not disappear completely and leave a shadow or outline of the stain.

Note 2:

If the stain has been there for more than a month for a pebble or marblesheen pool, it will be quicker and as cost effective to empty and acid wash the pool.

Treating Black Spot in Fibreglass pools:

- Remove Chlorine.
- Add 4 Kg of Lo-Chlor Spotaway and leave overnight or up to 4 days, if necessary.
- Then balance water and Superchlorinate.
- After 24 hours add 1 Litre of Lo-Chlor Metal Solution.
- Results will be visible within 5-7 days

Note:

This treatment removes the visible Black Spot but does not stop the osmosis which caused it.

The Black Spots will reappear after three to six months.

Treating Organic Stains:

- Adjust pH to 7.0 to 7.2 and
- Add 20 Litres of Liquid Chlorine.
- Filter as normal for 72 Hours.
- This should bleach out any organic stains.

- Severe stains may be helped by sprinkling Lo-Chlor Black Spot 900 Algaecide directly on to them and leaving it overnight.
- If the stains were caused by dirt it may also be necessary to treat for Iron as well.

Note:

For organic stains in Vinyl pools try 1Kg of Lo-Chlor Multi Stain Remover

Carefully follow directions as this should never be added directly to a Vinyl pool surface

Treating Scale:

If the scale has been there less than 2 years...

- Add 2 Kg of Lo-Chlor Nail the Scale, by sprinkling around the pool.
- It may take up to 6 weeks to remove the scale.
- A second dose can be added after 2 weeks if required.

Note: Nail the Scale will remove some Chlorine and lower TA slightly. Remember to monitor these.

If the scale has been there longer than 2 years...

- The easiest way to remove it, is to empty and acid wash the pool
- For fibreglass pools it is possible to add 25 Litres of Hydrochloric Acid directly to the water and leave the pool running as normal for seven to 14 days.
- The water is then rebalanced, adding buffer slowly!

Remember - Look for the cause!

There is nothing worse than spending time and effort in removing a stain only to have it reappear after three weeks. This is a very common scenario when using something like Lo-Chlor Citra-Clean.

The initial dose works well but Chlorine slowly breaks down the Iron/Citric Acid complex and the stain reappears.

Salt is the biggest cause of stains in pools so it is important the pool owner realises that stains are an ongoing problem in salt pools.

Training Bulletin # 4

All about Phosphates & Nitrates

Phosphates, Nitrites & Nitrates in Swimming Pools.

What they are & what they do?

Phosphates & Nitrogen are 2 naturally occurring elements in nature.

Phosphorous is a mineral & nitrogen is a gas. In nature, they don't cause or contribute to pool problems. However when they are "added" to the pool water, problems can arise - especially in a poorly maintained situation.

The two most significant problems are moderate to severe algae blooms and chlorine demand. Both elements are essentially set up as a buffet table for any algae to just come, eat & thrive.

Phosphates typically come into the pool from lawn care products; fertilizers, sprays, etc. Phosphates can also come from dead skin cells, body fats and oils. (Therefore, another good reason to shower before entering the pool.)

Lawn care products can be brought in from people walking on freshly treated areas where they are literally walked into the pool. They can also "drift" in when sprayed or just due to a windy day. Remember, phosphates can come from your yard, your neighbour's yard or even from someone you don't even know who lives 3 blocks away.

Phosphates (or forms of phosphorous) are often added directly into pools (yes!) in the form of "metal removers" and "stain control" chemicals – most pool sequestering or chelating products contain phosphorous.

Nitrogen can also come into your pool from lawn care products, but more typical, it's a case of sweat (shower before using the pool), urine (use the facilities before going into the pool) or other types of ammonia (ammonia is comprised of Nitrogen & Hydrogen - NH_4).

Algae loves both nitrogen AND phosphates (phosphorous).

Here's the typical scenario with Nitrogen. Nitrogen enters the water & combines with oxygen to form Nitrites (NO_2). The nitrogen will typically take the oxygen from the HOCl (hypochlorous acid - the form of chlorine that kills bacteria & algae) thereby causing a Chlorine Demand. You will have a difficult time maintaining chlorine, algae will thrive, the water will become cloudy, etc. Once the nitrites have taken on more oxygen & become Nitrates (NO_3), they are there to stay.

The only way to remove Nitrates from the water is to drain & refill with fresh water that is hopefully not contaminated with Nitrites. Shocking & oxidizing will help to a certain degree. Nitrates (NO_3) you can live with, Nitrites (NO or NO_2) are the problem causers.

Fortunately with phosphates there are options available to remove this contaminant from the water.

Why use Lo-Chlor Starver® Pool Maintenance?

Lo-Chlor Starver® Pool Maintenance is a patented product that leads the way in phosphate removal globally. It is the original phosphate remover and one that others have tried to replicate but have failed to succeed.

Lo-Chlor Starver® Pool Maintenance prevents algae growth by removing the phosphate in the water and allowing it to be filtered out.

Phosphate in pool water provides an abundance of food for algae to feed off and grow (similar to fertilising the lawn prior to rain).

Remember that algae are plants and need phosphate as their food source. Lo-Chlor Starver® Pool Maintenance removes phosphate from the pool water. No phosphate limits the opportunity for algae to grow and allows Chlorine and other chemicals to keep algae in check.

Generally high phosphate levels are a sign of the underlying cause as to why your pool has consistent outbreaks of green algae even though your Chlorine is at an acceptable level.

Phosphate is introduced into pool water by people (especially kids peeing in the pool, fruit bats or ducks, as well as decomposing leaf litter, grass clippings, mulch, windblown dust and dirt, garden soil, water runoff from the garden, any fertilisers and bore water).

It is quite common to get a high phosphate reading after rain because rainwater has washed all the dust and dirt off surrounding trees into your pool or especially if you are using a rain water diverter. This is particularly evident in older rural areas which due to the increase in population are now being populated as suburbs of the city. These areas were previous farming ground and have been heavily fertilised over the years and now with new building and dry weather the top soil dust caused by new development will increase your phosphate level over a period of time. It is important to understand that the building development may not be directly near your pool but several kilometres away to have an impact on your pool phosphate levels.

Starver® Pool Maintenance removes phosphate by absorbing it into the filter. Small doses are added to the skimmer box every three days until the phosphate has gone. Testing is then done every three weeks to see if a maintenance dose of Lo-Chlor Starver® Pool Maintenance needs to be added.

Starver® was developed by the CSIRO to combat blue /green algae outbreaks in dam/creeks etc and similarly combats the same affect now experienced in pools due to the dry weather and increased use of phosphates in garden and lawn use and in washing detergents.

Excessively high levels of Phosphate (4.0 ppm) can be reduced quickly by using Lo-Chlor Bulk Starver® then using regular Lo-Chlor Starver® Pool Maintenance.

Remember

No Phosphate = No Algae

Did you know?

- 2.5 Litres of Lo-Chlor Starver® Pool Maintenance will remove 1.2 PPM of Phosphate in a 50,000 Litre pool. You can work out exactly how much Starver® you will need by testing the Phosphate level and knowing the size of the pool.
- If the Phosphate level shows dark blue, i.e. more than 1.0 PPM, then dilute the pool water sample with tap water 50:50 and re-test. Multiply the result by 2. If this test still shows dark blue, dilute the pool water 1:4 with tap water and re-test. Multiply this answer by 5.
- If the Phosphate level is 4.0 PPM or more it is possible to remove large levels of Phosphate by using Lo-Chlor Bulk Starver®. This will get the Phosphate down to about 1.0 PPM which can then be removed by a regular Starver treatment.

- If the Phosphate level is more than 0.5 PPM it is faster to add the whole dose of Starver®, via the skimmer box on recirculate, than by adding 500 ML doses directly into the filter every 3 days, ; as per instructions on the bottle.
- This will make the pool cloudy for a while until the pump switches off, when the insoluble Phosphate will settle to the bottom and may be vacuumed into the filter or to waste. If the pump runs 24 hours the pool will be cloudy for 24 hours or more.
- If the Phosphate level is below 0.5 PPM adding 500 ML of Starver® directly to the skimmer box will remove the Phosphate without the pool going cloudy. Do not add 500 ML more often than every 3 days
- People contribute the most Phosphate to a pool, especially kids who pee in the pool. Average Phosphate levels in a backyard pool are 0.5 PPM. The highest levels of Phosphate are found in swim schools and caravan parks.
- The hotter the weather, the more people swim, the higher the Phosphate levels. Phosphate also comes from leaves left for 3 days in the pool, ducks, fruit bats, grass clippings, bark chips, dirt washed in after a storm and fertiliser inadvertently thrown in the pool.
- Phosphate levels of 5.0 PPM or more are usually the result of an accident rather than just people.
- No Phosphate is ideal. No blue colour in the test kit, no Phosphate.
- After Starver® treatment, when the Phosphate level returns to 0.2 PPM, it is time for a maintenance dose of 500 ML per 50,000 Litres. In an average pool this is about every 3 weeks.
- The Phosphate test kit supplied by Lo-Chlor has a shelf life of 6 months! Replace it regularly.
- Starver® removes Phosphate which algae need to grow. The lower the Phosphate the slower the algae can grow. Black spot needs more Phosphate than green algae so Starver is more effective against black spot.
- Starver® is only available from pool shops whereas other company's algacides and other phosphate removers are available from supermarkets, hardware stores, irrigation supply shops, produce merchants etc.
- It makes sense to sell Starver®.



Training Bulletin # 5

All about Bore Water,

River Water, Dam Water and Seawater

Source water can have a major impact on all facets of a residential swimming pool. Not only can it affect the water chemistry but it can also be detrimental to equipment, pool surfaces and bathers and their comfort levels. In this section we will cover the following topics:

- Why is bore water a problem
- Initial treatment of bore water
- Ongoing treatment of the pool water
- River Water and Dam Water
- Initial treatment of River and Dam water
- Ongoing treatment of River and Dam water.
- Seawater
- Initial treatment of Seawater
- Ongoing treatment of Seawater

Why is bore water a problem?

Bore Water contains high levels of Total Alkalinity and / or high levels of Calcium, Silicates, Iron, Manganese, Salt and often has a low pH and a high temperature.

The dissolved metals in particular can be highly detrimental to a pool and if at all possible it is better and cheaper to buy in fresh water.

Salt Chlorinators should not be fitted to bore water pools because the cell clogs up very quickly, within a day so the owner is forever cleaning it.

Initial treatment of the pool:

No two bores produce the same quality water so it is not possible to give a simple formula for the initial treatment.

A common analysis might give a Total Alkalinity of 600PPM and a pH of 6.0. This water would not be very pleasant to swim in as the low pH would cause sore eyes and itchy skin and would use large amounts of Chlorine trying to keep a Free Chlorine of 3.0PPM.

- The initial treatment would be to bring the pH up to 7.4 with small amounts of Soda Ash added every two hours.
- This tends to precipitate the dissolved metals such as Iron so often the water turns brown and the walls are stained.
- If this happens a treatment with Lo-Chlor Multi Stain Remover followed by Lo-Chlor Maxi Floc Plus (2 Kg of Soda Ash followed by the addition of the floc) will drop all the metals out of solution into the floc which is then vacuumed to waste.
- Do not attempt to filter a brown pool as the metals will clog the filter.
- When the pH is OK Superchlorinate with Chlorine.

Ongoing treatment of the water:

- The Total Alkalinity is best left at the high levels and allowed to come down naturally (it will take three months or more).
- If Hydrochloric Acid is added the pH quickly drops but the Alkalinity only falls very slowly.
- If the pool owner does want to get the Alkalinity down it is best to add small (250MLS) doses of Hydrochloric Acid diluted in a bucket of water every three days.
- If the Calcium content of the pool is high scaling will occur very rapidly.
- If Calcium levels are high you can treat it effectively with Lo-Chlor Calcium Hardness Reducer.
- Once the level is more acceptable we then recommend maintenance treatment with Lo-Chlor Scale Eliminator. This should be repeated every 2 months

IMPORTANT TIP

- Very often after adding chlorine to the pool the water will immediately turn brown. The ongoing use of Ultra-Kleer Plus 4 in 1 will help to prevent this problem. We sell an enormous amount of this product in larger size containers through our pool shop outlets to pool owners living in rural areas etc

River Water and Dam Water

The difference between Bore water and River and Dam Water is the high organic content of River and Dam Water and the fact that they are usually very cloudy. Rivers and Dams also contain trace metals like bore water so they do need to be treated and maintained.

Initial treatment:

In an ideal world the pool owner would have a large tank where he could treat the water before adding to the pool. As this is not usually the case the treatment is as follows:

- Turn the filter valve to recirculate (the fine sediment would clog the filter very quickly).
- Fill the pool up to 75MM above the skimmer.
- Turn on the pump.
- Add Soda Ash in 2 Kg lots (waiting 2 hours between additions) until the pH is 7.8 to 8.0.(this pH is necessary to remove dissolved metals).
- Add 1L Lo-Chlor Maxi Floc Plus
- Turn off the pump and leave overnight.
- Vacuum to waste.
- Turn filter valve back to filter and turn on the pump.
- Adjust pH to 7.2 to 7.6 with Hydrochloric Acid.
- Add 20 Litres of liquid Chlorine. Wait two hours and check Free Chlorine and Combined Chlorine.
- If combined Chlorine is more than half the free Chlorine add another 20 Litres of Liquid Chlorine and repeat the process.
- Finally balance the pool water.

Ongoing treatment:

Whenever the pool is topped up with more River or Dam water you will need to add a strong clarifier or a flocculant if the pool is very cloudy.

- For the clarifier we recommend Lo-Chlor Ultra Kleer Plus 4 in 1. Along with being a clarifier this unique natural clarifier will also remove unwanted metals, oils and particles from the water.
- If a floc is needed we recommend Lo-Chlor Maxi Floc Plus.

Note:

The pool should be Superchlorinated and the combined Chlorine checked to make sure it is below half the free Chlorine.

Seawater:

Seawater is not recommended for normal swimming pools.

It should only be used if the pool is to be filled and emptied on a regular basis.

Seawater quality varies depending on the time of year but often contains types of Algae spores not commonly seen in freshwater pools and also minerals that form stains and/or coloured compounds with Chlorine.

Initial treatment:

- If clear, adjust pH to 7.2 to 7.6 and Superchlorinate with 20 Litres of Liquid Chlorine
- After two hours check the combined Chlorine and if above 1.0ppm repeat the Superchlorination.
- Repeat until the combined Chlorine is below 1.0ppm.
- Adjust Total Alkalinity and Hardness as required.

Ongoing treatment:

- Treat as if a freshwater pool paying particular attention to cleanliness of the salt chlorinator cell if a salt chlorinated pool.
- To prevent calcium build up on the salt chlorinator cell use Lo-Chlor Scale Eliminator
- When cleaning calcium off the salt cell use Lo-Chlor Clean Cell Plus. Do NOT use hydrochloric acid.
- Clean Cell Plus is a unique blend of organic and inorganic acids that is very effective but will not harm the precious metals of the salt chlorinator cell.
- It is reusable and will prolong the life of the salt chlorinator cell.
- If adding seawater to top up it is important to check combined Chlorine and Superchlorinate if necessary.

WATER ANALYSIS SOFTWARE LO-CHLOR SOLUTIONS

State of the art Water Analysis Software leading the way in the pool and spa industry.

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