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Swimming pools – Water Quality

If not properly maintained, the water in your domestic swimming pool harbours a range of microbes, including bacteria and algae, that can cause health problems such as ear, nose and throat infections. You should check your swimming pool regularly to make sure that the water is healthy. A simple way to do this is to take a daily look into the pool. Is the water clear? Can you see to the bottom of the pool? Does the water look any different to how it looked the day before? Any changes, such as cloudiness, mean that you need to test the water and take steps to improve water quality before anyone goes swimming.

Sources of contamination

Some of the various sources of bacteria and microbes in your pool can include:
• People swimming in the pool – this is the main source of bacteria.
• Animals, such as dogs – some pets like to paddle in the pool on hot days.
• Dead wildlife – for example, frogs or lizards or insects may occasionally drown in your pool.
• Debris from around the property, such as leaves, grass and dust.

Swimming pool maintenance

The five keys to maintaining water quality in your swimming pool include:
• Filtration
• Chlorination
• pH level
• Total alkalinity (TA)
• Calcium hardness.

Filtration

The water in your pool is pumped through a filter to remove debris and particles. How long you need to run
the filter depends on the size of your swimming pool and the horsepower of your pool pump. If you are unsure, check your instruction manual or consult with a pool maintenance company. Remember that even when you are filtering your pool according to specifications, about 35 per cent of the water still won't be filtered.

Chlorination

Chlorine is a chemical that disinfects the water and helps to remove debris. You should use a chlorine stabiliser to extend the chlorine's half-life. Generally, the longer your filtration cycle, the less chlorine you will need. Similarly, the more chlorine you use, the shorter the required filtration cycle. Remember that your chlorine requirements will be affected by a range of factors including your pump and filter system, water temperature, water level, amount of debris, and the number of swimmers in your pool.

pH level

The pH level indicates how acidic or alkaline the water is at any given time. A pH level of 7 means that water is neutral; above 7 means the water is alkaline, while below 7 indicates acidity. You should aim for a pH level of between 7 and 7.6. If the water pH is higher than 8, anyone who swims in the pool is at risk of skin rashes, while a pH of lower than 7 can sting the swimmers' eyes.
Some of the many factors that can affect your pool's pH level include heavy rain, lots of swimmers and pool chemicals. Remember to regularly check your pool's pH level.

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Total alkalinity (TA)

Total alkalinity (TA) means the sum of all alkaline chemicals in your water. If TA is too low, the pH balance can become unstable; concrete and painted pool surfaces will also deteriorate over time. TA and pH are interconnected; for example, raising the TA could also raise the pH. Make sure you don't disrupt your pool's pH when adjusting the TA, and vice versa.

Calcium hardness

Calcium hardness refers to the amount of the mineral calcium dissolved in your water. Low calcium levels will deteriorate pool surfaces, while high calcium levels will leave a 'scum' or scale on surfaces and equipment.

General water quality suggestions

- Be guided by pool professionals, but general suggestions on maintaining good water quality in your swimming pool include:
- Check your pH and chlorine levels daily. Preferably, these tests should be done before the first swim of the day, to make sure the water quality hasn't altered overnight.
- In very hot weather, it is a good idea to check the pH and chlorine twice daily.
- Remember that heated pools need more chlorine than non-heated pools.
- Brush and vacuum your pool on a regular basis.
- Regularly check the pump, skimmer boxes and other pool equipment, and repair or replace parts as necessary.

Solving common problems

Be guided by your pool maintenance specialist or pool chemical supplier, but general suggestions include:

• **Algae** – these single-celled organisms have a short life cycle, and can turn the water in your swimming pool green within a few hours. The cause is zero chlorination, which allows these organisms to thrive. Treatment includes lowering the pH level by adding pool acid and, later, adding a copper treatment to the water to kill the spores. You can use a brush and garden hose to remove algae from pool surfaces. The next day, vacuum the settled algae from the floor of your pool – don't try to remove it by running the filter. Make sure you check the TA, pH and calcium hardness before you allow anyone to swim.

• **Faeces** – young children can occasionally have a toileting accident while swimming. Get everyone to vacate the pool, and fish out the faeces using a fine mesh scoop. If your pool is small, you might consider draining and cleaning it. Otherwise, superchlorinate the pool for at least half an hour before letting anyone swim. Always ensure chlorine levels are back to regular levels before swimming.

• **Chlorine smell** – a strong chlorine smell can affect the eyes, nose and skin. Contrary to popular belief, it's too little chlorine that causes the smell, not too much. Too little chlorine permits chloramines compounds to form. It is these compounds that have the strong smell and that cause the irritation. If your pool smells strongly, check the chlorine level – you'll find you need to superchlorinate.

Safety suggestions for pool chemicals

- Pool chemicals can be dangerous if not handled properly. Suggestions include:
- Keep pool chemicals locked up in a cool, dry place.
- Don't store pool chemicals near other chemicals or flammables, including petrol, detergents or alcohol.

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- Always use chemicals strictly as instructed.
- Don’t combine chemicals together – for example, mixing different types of chlorine together (such as granular and liquid) can cause an explosion.
- To avoid splashing the chemicals, add the chemicals to water – don’t add the water to the chemicals.
- If you are splashed, rinse contaminated clothing straight away and wash your skin thoroughly in plenty of water.

Where to get help

- Pool chemical suppliers
- Pool maintenance companies
- Environmental Health Officer at your local council.

Things to remember

- People swimming in the pool are the main source of bacterial contamination.
- The keys to maintaining water quality in your swimming pool include filtration, chlorination, pH level, total alkalinity (TA) and calcium hardness.
- Check your pH and chlorine levels daily – preferably, these tests should be done before the first swim of the day to make sure the water quality hasn’t altered overnight.

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