

Problems	Possible reasons	Actions
pH too high	<p>1 - Under-dosing of acid</p> <p>2 – Acid tank may be empty on an auto dosing system</p> <p>3 - Sample flow to automatic controller is interrupted or has air in.</p> <p>4 - Ph controller may be dirty, or out of calibration or faulty</p>	<p>1 - Adjust pH by dosing acid automatically; or if manual, increase testing and dosing frequency</p> <p>2 - Check dose tank and refill as required</p> <p>3 - Check the flow to the control sample point.</p> <p>4 - Clean/calibrate/replace sensor</p>
pH too low	<p>1 - Over-dosing of acid, high use of chlorine tablets.(chlorine Tablets are very acidic)</p> <p>2 - An interruption to sensor sample stream flow may cause inaccurate readings</p> <p>3 - pH sensor may be fouled, out of calibration or faulty</p> <p>4- Chlorine tablets are very acidic and could be lowering the Ph if using a lot of chlorine</p>	<p>1 - Stop dosing acid, if necessary dose pool with Ph increaser. Change chlorine type. See no 4</p> <p>2 - Check the flow to the controller</p> <p>3 - Clean/calibrate/replace sensor.</p> <p>4- Introduce Chlorine into the pool as granules or sodium hypochlorite until Ph increases</p>
pH erratic	<p>1 - Dosing erratic</p> <p>3 - Water not buffered by alkaline content</p>	<p>1 - Check dosing accuracy and frequency</p> <p>3 - Raise alkalinity by dosing with sodium bicarbonate. Send water sample for testing at a specialist swimming pool centre to ensure correct water balance.</p>

<p>pH difficult to lower to desirable range</p>	<p>Alkalinity too high</p>	<p>Increase acid dosing and/or dilute the pool with fresh water. Send water sample for testing at a specialist swimming pool centre to ensure correct water balance.</p>
<p>Cloudy, dirty water; lack of clarity and no sparkle. Water should be clear, blue and sparkling</p>	<p>1 – Filtration system inadequate, under sized or under-performing.</p> <p>2 - Filter ineffective: possible build-up of calcium, grease or building material if renovations have taken place.</p> <p>3 - Disinfection failure: hardness salts coming out of solution due to high alkalinity.</p> <p>4 - High calcium hardness</p> <p>5 - Air in water turning cloudy when filtered water returns to pool inlets</p> <p>6 - Over-dosing of coagulant</p> <p>7 - Ineffective filtration</p> <p>8 - Coagulation ineffective</p>	<p>1 - Check specification and if necessary reduce bather loading. Check pool plant operation for restricted turnover, blockage, valve partially closed etc</p> <p>2 - Check filter pressures and flow rates; inspect bed and quality of media. If inspection reveals problem with the under drains or ineffective backwash flow, these need to be resolved by specialists. Otherwise, backwash thoroughly and consider adding a filter cleaner.</p> <p>3 - Check disinfection dosing, free chlorine and pH levels, Send water sample for testing at a specialist swimming pool centre to ensure correct water balance.</p> <p>4 - Control calcium hardness</p> <p>5 - Check air release on filters – operate manually if necessary to release trapped air. Check for air being drawn into the system on the suction side of the pump, eg through the strainer gasket.</p> <p>6 - Check coagulant dosing is continuous and at low levels</p> <p>7 - Check filter and bed</p> <p>8 - Check coagulation regime</p>

<p>Discolouration of pool walls and floor; black on grouting</p>	<p>1 - Algal growth – may be green dark green (almost black) and red-brown. Algae are caused by effects of UV (sunlight); also poor filtration, mixing and turnover</p> <p>2 - Disinfectant residual may be too low</p> <p>3 – Metals may be present in water</p> <p>4 – Overdosing of copper based algaecide</p>	<p>1 - Raise free chlorine concentration to 5mg/l overnight; brush discoloured areas; vacuum or brush algae from surfaces</p> <p>2 - Adjust chlorination (but also check water distribution and turnover)</p> <p>3 - . Send water sample for testing at a specialist swimming pool centre to ensure correct water balance and presence of metals dissolved in water.</p> <p>4 - . Send water sample for testing at a specialist swimming pool centre to ensure correct water balance and presence of too much copper</p>
<p>Slimy build up on pool walls and overflow grill</p>	<p>Bacterial growth, biofilm</p>	<p>Check circulation; raise free chlorine concentration to 5mg/l overnight, brush walls. Adjust chlorination and check water circulation and turnover.</p>
<p>Strong chlorine smell, irritation of eyes and upper respiratory tracts</p>	<p>1 - Combined chlorine too high because of bather pollution</p> <p>2 - Free chlorine too high</p> <p>3 - pH value too high</p> <p>4 - pH too low</p> <p>5 - A build-up of organic material in overflow channels and/or balance tanks can also contribute to the problem</p>	<p>1 - Reduce bather load and ensure pre-swim hygiene is observed.</p> <p>2 - Adjust to set range for the pool, either by uncovering pool and letting chlorine reduce over time or by adding chlorine reducer.</p> <p>3 - Lower pH</p> <p>4 - Increase Ph</p> <p>5 - Cleaning of overflow channels and balance tanks should be part of periodic maintenance if accessible.</p>
<p>Free chlorine level low and difficult to maintain</p>	<p>1 - Pollution level too high</p> <p>2 - Sunlight -UV breaks down free chlorine</p>	<p>1 - Reduce bather loading and ensure pre- swim hygiene is observed. Shock Dose pool</p> <p>2 - If it's an outdoor pool or one with large glazed areas, consider cyanuric</p>

	<p>3 - Turnover reduced, hydraulics poor, filter dirty and flow levels reduced</p>	<p>acid dosing to prevent chlorine loss</p> <p>3 - Check filter, flow rates, strainer and valves.</p>
<p>Free chlorine too high</p>	<p>1 - The disinfectant sensor may be fouled, out of calibration or faulty</p> <p>2 - A lack of sample stream flow may be causing incorrect readings</p> <p>3 - The system may be siphoning due to contamination of the dosage pump valves or pressure retention (anti-siphon) valve</p> <p>4 - The solenoid valve may be stuck open and delivering disinfectant continuously</p> <p>5 - Chlorine testing may be bleaching out giving inaccurate low chlorine reading</p>	<p>1 - Check that there is no restriction to the sensor sample stream. Check that the dosage control and delivery systems are operating normally and clean/calibrate/replace the sensor</p> <p>2 - Re-test and confirm the reading diluting the pool water first with non chlorinated water on a 2:1 basis then double the result. If the disinfectant level is outside minimum requirement, the pool must be closed until within range. If necessary, reduce disinfectant levels by dilution or sodium thiosulphate</p> <p>3 - Check the dosage pump suction and discharge valves for contamination, as well as the diaphragm of the pressure retention (anti-siphon) valve for contamination.</p> <p>4 - For erosion feed systems: check that the solenoid valve is operating correctly</p> <p>5 -</p>
<p>Filter rate reduced (pressure differential too high)</p>	<p>1 - Bed of filter dirty through infrequent backwashing</p> <p>2 - Too high levels of coagulant</p>	<p>1 - Check and improve backwash regime; inspect filter bed for contamination,; consider refurbishment of under drains and media</p> <p>2 - Check coagulant dosing rates and quantities</p>
<p>Scaling on surfaces, fittings, inside pipes etc</p>	<p>Water too hard</p>	<p>Check for balanced water test and adjust pH, alkalinity and hardness according to findings.</p>

No free chlorine reading using test kit	Chlorine levels too high	Look for initial flash of colour when introducing DPD to drop of water in test cell. Take a further test diluting pool water with water containing no chlorine
Chlorinous smells and high air humidity	Ineffective air circulation in pool hall	Check air handling, dampers, filters and automatic controls; check levels of fresh air introduction
Water has salty taste	TDS too high	Dilute with fresh water
Staining at water inlet	Iron salts coming out of solution	Check pH, water balance and coagulation. Consider full physical analysis of source water and pool water
Sand in the pool	Underdrain system in filters failed	Check filter bed for signs of sand loss , uneven distribution and fissures. Replace underdrains and media