

Camp Gan Izzy-Water safety Policy

National Regulations

Centre Based and Mobile Child Care Services Regulation (No2) 1996
Occupational Health and Safety Act 2000 and Regulations 2001
Australian Standards for Swimming pool safety
Public Swimming Pool and Spa Guidelines 1996, NSW

Aim

Prevent child accidents and illnesses relating to swimming and wading pools and other water hazards and to comply with Regulations.

Who is affected by this policy?

Children
Families
Carers
Management

Practice

Currently we do not have a pool of our own and on the infrequent occasion where we may hire a third party pool service, we will ensure it is a pool that is up to date with maintenance in accordance with the policies below.

To stop accidents and illnesses relating to swimming pools, wading pools, water troughs and other water situations, our service will endeavour to ensure all the policies below are adhered to.

- Remove any items or objects that could be used to climb into the fenced area of a pool, trough, or water storage unit e.g. chairs, bins, bikes, any overhanging trees.
- Make sure no child swims in any water without:
 - Written permission from family member to learn water safety and swimming.
 - Appropriate carers/child ratios in place
 - Having sufficient numbers of carers present who have first aid and recognised award experience in water safety and rescue procedures.
- At all times children near water are closely supervised. A child will never be left unattended near any water, and two carers must supervise if children are using a paddling pool/water trough.
- Display a Cardiopulmonary Resuscitation (CPR) guide near any water. Ensure pool filters and chemicals are inaccessible to children.
- Ensure that all water containers, e.g. pond's, spas, nappy buckets, bathtubs are covered or made inaccessible to children and also make sure children's play areas are safely fenced off from water hazards such as rivers, dams, creeks, lakes, irrigation channels, wells etc.
- Immediately empty all wading pools/water troughs etc. after every use, storage should prevent the collection of water e.g. upright/inverted, also check grounds after rain or watering and empty water that has collected in holes or containers.
- Ensure wading/water trough are hygienically cleaned, disinfected and chlorinated appropriately:

- On a daily basis remove leaves and debris, hose away surface dirt and scrub inside with disinfectant.
- Wash away disinfectant before filling pool/trough.
- Add Chlorine to pool before children used the pool.
- Check chlorine levels frequently.
- Children with diarrhoea, upset stomach, open sores or nasal infections should not use the pool.
- All children should wear appropriate bathers, go to the toilet before entering the pool, and follow correct toileting hygiene practices while in the pool.
- Remove all children immediately, empty and disinfect the pool should a child pass a bowel motion whilst in the pool.
- Maintain swimming pool according to Public Swimming pool and Spa Guidelines.

Disinfectant Summary

<u>Satisfactory Disinfectant</u>	<u>Unsatisfactory Disinfectant</u>
Chlorine	Ultraviolet Light and Hydrogen Peroxide
Isocyanurated Chlorine in outdoor pools	Iodine
Bromine	Silver/Copper Electro-Katadyn Process
Chlorine/Bromine Systems	Hydrogen Peroxide
Ozone with Chlorine	Magnetism
Ozone with Bromine	
Polyhexamethylene biguanide in domestic sized pools <100,000 litres	

Other Chemicals

There is a wide range of chemicals which may need to be used in the treatment of swimming pool water apart from disinfectants. The main common named chemicals are:

SODA ASH - (Sodium carbonate) is a strong alkali powder or liquid, which is used to quickly raise the pH of a pool. Soda ash should not be added to a pool by slug dosing but should be added slowly and gradually over an extended period. This is a dangerous chemical and should be handled with care.

DRY ACID - (sodium bisulphate) is a strong acid powder, which may used to quickly reduce pH. Dry acid should not be added to a pool by slug dosing, but should be added slowly and gradually over an extended period. This is a dangerous chemical and should be handled with care.

MURIATIC ACID - (hydrochloric acid) is a strong acidic liquid which may also be used to reduce pH quickly particularly when the reserve alkalinity is greater than 120 mg/L. This is a dangerous chemical and should be handled with care.

CARBON DIOXIDE - (CO₂) is a gas which when added to water forms a weak acid (carbonic acid) and may be used to reduce pH when the reserve alkalinity is less than 120 mg/L. It is best used in an automated pH correction system.

BICARB - (sodium bicarbonate) is a weak alkali powder, which is used to raise total alkalinity. Slug dosing will not raise the pH to greater than 8.3.

ALGAECIDES - algae are relatively harmless to humans but they may make the pool unsightly, may cause colours, promote bacterial growth, assist in the formation of chloramines and their presence indicates poor pool maintenance. From a safety point of view algae cause slippery pool walls, pool bottoms and walkways. Algae can be introduced into a pool in the form of airborne spores, blowing free in the air attached to dust or enveloped by raindrops. They are mainly associated with outdoor pools as they require sunlight to grow. The most uniformly accepted algal control procedure is to maintain a free chlorine residual of between 1 to 2 mg/L or where pools are warmer than 26 C a minimum 3 mg/L concentration. A successful technique for algal control is to frequently superchlorinate the swimming pool to 10 mg/L particularly after windy conditions and rainfall. The use of a pool cover to prevent contamination and reduce light intensity may also be helpful. There are a range of algaecides available on the market and their compatibility with the disinfectant system should be determined at the point of sale. Algaecides are an adjunct to pool conditioning for winter.

Storage of Chemicals

The storage and handling of bulk chemicals is controlled under the Dangerous Goods Act 1975 and administered by the WorkCover Authority. Pool operators should consult with this authority for precise requirements.

Chemicals should be stored separately in well labelled, dedicated, air tight containers and they should never be allowed to mix. Chlorine based chemicals should never be mixed with acids as the dangerous chlorine gas may be liberated. Oxidising agents such as disinfectants should not be allowed to remain in contact with organic matter as spontaneous combustion may occur. Fires may only be extinguished with copious quantities of water.

The following twelve rules should be observed:

1. Ensure all chemical containers are labelled and follow all instructions implicitly.
2. Store chemicals separately from each other.
3. Store chemicals in a cool, clean, dry, well ventilated, secure area to prevent access by children. Store above ground level to minimise spills, and do not store liquid chemicals above dry chemicals.
4. Wear appropriate protective impervious gloves and goggles when handling chemicals.
5. Wash hands before and after handling chemicals.
6. Avoid contact with chemicals on skin and eyes, and avoid breathing vapours.
7. Use a separate scoop for dispensing each chemical.
8. Always add the chemical to clear, clean water and never add water directly to a chemical.
9. Avoid spillages and clean up any spillage immediately.
10. Remove chemical contaminated clothing immediately.
11. When not in use keep chemical containers sealed with original closure.
12. Empty containers should be washed before disposal.

Testing Frequencies

<u>Test</u>	<u>Minimum Manual Testing Frequency</u>
Continuous non-automatic control dosing: <ul style="list-style-type: none"> • Free Chlorine • Total Chlorine (Combined Chlorine) • Total Bromine • pH • Polyhexamethylene biguanide 	Prior to opening and thence two hourly
Automatic control dosing: <ul style="list-style-type: none"> • Free Chlorine 	Prior to opening and then once during the day to confirm automatic readings. (Automatic readings

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<ul style="list-style-type: none"> • Total Chlorine (Combined Chlorine) • Total Bromine • pH • Redox Potential 	should be logged four hourly).
Ozone <ul style="list-style-type: none"> • Reserve (Total) Alkalinity 	Daily
Isocyanuric Acid <ul style="list-style-type: none"> • Clarity • Water Balance • Bromide (Sodium bromide systems) • Total Dissolved Solids • Bacteriological Sampling (first two months) 	Weekly
Bacteriological Sampling (after first two months) <ul style="list-style-type: none"> • Dimethylhydantoin (BCDMH systems) 	Monthly

Chlorination of a Swimming pool

Where water in a public swimming pool is being disinfected with a chlorine disinfectant it shall be maintained, when the pool is open for bathing, in accordance with the following parameters:

1. The swimming pool water shall be disinfected using continuous dosing equipment.
2. The chemical parameters of the swimming pool water shall conform to the next Table:

Chemical Requirements for Chlorinated Public Swimming Pools

<u>Type</u>	<u>Free Chlorine (mg/L) minimum</u>	<u>Total Chlorine (mg/L) maximum</u>	<u>Combined Chlorine (mg/L) maximum</u>	<u>pH range</u>	<u>Total Alkalinity (mg/L) range</u>
Outdoor	1.0	10.0	1.0	7.2- 7.8	80- 200
Outdoor stabilised with isocyanuric acid	3.0	10.0	Not applicable	7.2- 7.8	80- 200

NOTE: Combined chlorine shall not exceed half the total chlorine concentration.

3. The maximum chlorine stabilising isocyanuric acid level in an outdoor pool is 100mg/L . No isocyanurate containing chemical shall be used in indoor swimming pools.
4. Where automatic dosing equipment using oxidation reduction potential (ORP) is installed the ORP shall be set to the equivalence of the minimum free chlorine concentration in previous table and shall no be less than 720mV.
5. Where automatic dosing using amperometric control is installed it shall be set to follow the requirements of previous Table.
6. Results of all chemical tests and the date and time of testing are to be entered into a log and kept onsite.

Bromination of a Swimming Pool

Where water in a public swimming pool is being disinfected with a bromine disinfectant it shall be maintained, when the pool is open for bathing, in accordance with the following parameters:

1. The swimming pool water shall be disinfected using continuous dosing equipment.
2. The chemical parameters of the swimming pool water shall conform to next table:

Chemical Requirements for Brominated Public Swimming Pool

<u>Type</u>	<u>Free Bromine (mg/L) minimum</u>	<u>Total Bromine (mg/L) maximum</u>	<u>pH range</u>	<u>Total Alkalinity (mg/L) range</u>
Outdoor	2.25	9.0	7.2- 7.8	80-200

3. Where the sodium bromide plus hypochlorite process is used the minimum bromide concentration shall be 9mg/L.
4. Where bromochlorodimethylhydantoin is used the maximum dimethylhydantoin concentration shall be 200 mg/L.
5. Where automatic dosing equipment is installed it may control pH and disinfectant concentrations.
6. Where automatic dosing equipment using oxidation reduction potential (ORP) is installed the ORP shall be set at the equivalence of the minimum free bromine concentration in Table 8 and shall be not less than 700mV.
7. Where automatic dosing using amperometric control is installed it shall be set to follow the requirements of the previous table.
8. Results of all chemical tests and the date and time of testing are to be entered into a log and kept onsite.

Ozonation and Chlorination of a swimming pool

Where water in a public swimming pool is being disinfected with ozone and chlorine it shall be maintained, when the pool is open for bathing, in accordance with the following parameters:

1. The swimming pool water shall be disinfected using continuous dosing equipment.
2. The ozone shall be generated by the corona discharge method and dosed in a closed system.
3. Residual excess ozone in the treated water shall be quenched with an activated carbon filter bed prior to the water being returned to the swimming pool.
4. Where **slipstream** ozonation is used (where 20% of the total water flow is ozonated) the chemical parameters of the pool water shall conform to next table:

Chemical Requirements for Slipstream Ozonation and Chlorination of a Swimming Pool

<u>Type</u>	<u>Free Chlorine (mg/L) minimum</u>	<u>Total Chlorine (mg/L) maximum</u>	<u>Combined Chlorine (mg/L) maximum</u>	<u>pH range</u>	<u>Total Alkalinity (mg/L) range</u>
Outdoor	1.0	10.0	1.0	7.2- 7.8	80- 200

NOTE: Combined chlorine shall also not exceed half the total chlorine concentration.

5. Where automatic dosing equipment using oxidation reduction potential (ORP) is installed in the side stream ozonation process the ORP shall be set to the equivalence of the minimum free chlorine concentration in Table 9 and shall be not less than 750mV.

6 Reduced Chlorine Concentrations

- 6.1 Where mainstream ozonation is used the chemical parameters of the pool water shall conform with the next table (provided the chlorination dosing plant is capable of delivering the chlorine levels specified in the previous table where ozonation fails):
- 6.2 Where automatic dosing equipment using redox potential (ORP) is installed in the mainstream ozonation process the ORP shall be set to the equivalence of the minimum free chlorine concentration in the next table and shall be not less than 720mV.

Chemical Requirements for Mainstream Ozonation and Chlorination of a Swimming pool

<u>Type</u>	<u>Free Chlorine (mg/L) minimum</u>	<u>Total Chlorine (mg/L) maximum</u>	<u>Combined Chlorine (mg/L) maximum</u>	<u>pH range</u>	<u>Total Alkalinity (mg/L) range</u>
Outdoor	1.0	10.0	1.0	7.2- 7.8	80- 200

7. The contact time between the pool water and ozone shall be at least 2 minutes at an ozone concentration of 1mg/L with injection prior to filtration and 0.8mg/L with injection after filtration.
8. Where automatic dosing equipment is installed it may control pH and disinfectant concentrations.
9. Where automatic dosing using amperometric control is installed it shall be set to follow the requirements of previous table.
10. Results of all chemical tests and the date and time of testing are to be entered into a log and kept onsite.

Ozonation and Bromination of a Swimming pool

Where water in a public swimming pool is being disinfected with ozone and bromine it shall be maintained, when the pool is open for bathing, in accordance with the following parameters:

1. The swimming pool water shall be disinfected using continuous dosing equipment.
2. The ozone shall be generated by the corona discharge method and dosed in a closed system.
3. The chemical parameters of the swimming pool water shall conform to the next table:

Chemical Requirements for Ozonation and Bromination of a Public Swimming Pool

<u>Type</u>	<u>Free Bromine (mg/L) minimum</u>	<u>Total Bromine(mg/L) maximum</u>	<u>pH range</u>	<u>Total Alkalinity (mg/L) range</u>
Outdoor	2.25	9.0	7.2- 7.8	80- 200

4. The minimum calculated bromide concentration shall be 15 mg/L.
5. Where automatic dosing equipment is installed it may control pH and disinfectant concentrations.
6. Where automatic dosing equipment using oxidation reduction potential (ORP) is installed the ORP shall be set to the equivalence of the minimum free bromine concentration in the previous table and shall be not less than 720mV.
7. The contact time between the pool water and ozone shall be at least 2 minutes at an ozone concentration of 2mg/L or sufficient to maintain the free bromine concentrations specified in the previous table.
8. Where automatic dosing using amperometric control is installed it shall be set to follow the requirements of the previous table.
9. A backup disinfection system shall be installed in the case of ozone plant failure.
10. Results of all chemical tests and the date and time of testing are to be entered into a log and kept onsite.

Polyhexamethylene Biguanide (BAQUACIL®) and Hydrogen peroxide in a swimming pool

Where water in a public swimming pool being disinfected with polyhexamethylene biguanide and hydrogen peroxide it shall be maintained, when the pool is open for bathing, in accordance with the following parameters:

1. The disinfectant concentration shall be equal to or greater than 50 mg/L of polyhexamethylene biguanide in an aqueous solution, with 20% active ingredient.
2. The pool water shall be dosed at least once every 14 days with a shock dose of hydrogen peroxide to produce a concentration exceeding 100 mg/L of hydrogen peroxide in the pool water.
3. The pH shall be maintained within the range 7.2 to 7.8.
4. The total alkalinity shall be greater than 80 mg/L.
5. Results of all chemical tests and the date and time of testing are to be entered into a log and kept onsite.

Sources

Centre Based and Mobile Child Care Services Regulation (No2) 1996
Occupational Health and Safety Act 2000 and Regulations 2001
Australian Standards for Swimming pool safety
Public Swimming Pool and Spa Guidelines 1996, NSW

Review

The policy will be reviewed annually.

Review will be conducted by:

- Management
- Employees
- Families
- Interested Parties

Reviewed: 21/02/2017

Date for next review: 21/02/2018