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Residential Swimming Pool and Spa Sanitation

Canada 



Sanitation

Water conditions in swimming pools and spas create an ideal environment for disease-causing microorganisms such as bacteria and viruses, which can cause ear and gastrointestinal infections, dermatitis and other ailments. Sanitation is necessary to keep the amount of disease-causing microorganisms at safe levels.

Chlorine- and bromine-based chemical products are effective sanitizers that have the added benefit of controlling algae. These products are available in liquid, granular, tablet and puck form, and can be added to water manually or through an automatic dispensing unit.

Sanitation can also be achieved using chlorine or bromine generators, which use electricity to produce hypochlorous or hypobromous acid from salt. Hypochlorous and hypobromous acids are the primary compounds responsible for sanitation in chlorine- and bromine-based chemical products.

The amount of sanitizer required depends on various factors such as the water volume in your pool or spa, the number of users, the frequency of use, the water temperature and the amount of untreated water (such as rain or tap water) entering the pool or spa. Only regular testing can determine if the level of sanitizer is sufficient to protect people from disease-causing microorganisms.

Minimum Level of Sanitizer

Regardless of whether you choose chemical products or electrical devices to control disease-causing microorganisms, a certain amount of sanitizer must be maintained to prevent disease-causing microorganisms from multiplying.

The level of sanitizer in your pool or spa is referred to as free available chlorine or equivalent bromine. The recommended level of free available chlorine or equivalent bromine for residential swimming pool water is from one to three parts chlorine or equivalent bromine per million parts water (1-3 ppm). For residential spa water, it is 3-5 ppm. The actual level of sanitizer in pool or spa water can be determined with a good quality test kit.

The label directions of pool sanitizers and algicides may instruct swimming pool owners to maintain a minimum chlorine level of 0.6 ppm. Because the presence of organic matter in swimming pool water can reduce the effectiveness of sanitizers, maintaining sanitizer levels at 0.6 ppm is possible only when the organic matter content is controlled. Note that the 0.6 ppm chlorine level applies to swimming pool water only. Spa water must be maintained at 3-5 ppm.

Algae

Hot weather, sunlight and insufficient sanitizer levels can stimulate the growth of algae. Although algae do not directly harm people, they can create a potential hazard by making pool and spa surfaces slippery. Algae also reduce the effectiveness of sanitizers because more of the sanitizer in the pool or spa system is used to control them, reducing the amount available to kill disease-causing microorganisms.



Using sanitizers regularly should prevent the excessive growth of algae; however, algae control products, or algicides, may sometimes be required to tackle specific algae problems. Chemical algicide options include copper sulphate-based products and quaternary ammonium chloride-based products. Devices that release metal ions into pool or spa water can also be used to control algae. **Note that algicides do not control disease-causing microorganisms. The use of chlorine- or bromine-based products is still required when using algicides.**

Organic Matter

Ozone-generating devices can be used to reduce the organic matter (e.g. tree leaves, grass cuttings) entering pool and spa water. The devices reduce organic matter by oxidizing it. **Note that ozone-generating devices do not control disease-causing microorganisms. The use of chlorine- or bromine-based products is still required when using ozone generators.**

Saltwater Pools and Spas

Saltwater swimming pools and spas rely on chlorine- or bromine-generating devices to sanitize the water. They require the same basic care as traditional pools and spas to control disease-causing microorganisms, algae and organic matter. The main difference is that saltwater pools and spas rely on chlorine- or *bromine-generating devices* to sanitize the water whereas traditional pools and spas can use chlorine or bromine *chemical products*. As with traditional pools and spas, the minimum free available chlorine or equivalent bromine levels must be maintained at 1-3 ppm for swimming pool water and at 3-5 ppm for spa water. Sanitizer levels should be checked often using a test kit.

Selecting Pool and Spa Maintenance Products

To keep disease-causing microorganisms at safe levels and prevent excessive algae growth, it is important to establish a regular maintenance program. We recommend you consult a local pool or spa company to develop a maintenance program for your pool or spa.

The individual products used to control disease-causing microorganisms and algae in pool and spa water are regulated by Health Canada under the federal *Pest Control Products Act*. This ensures that products used to treat disease-causing microorganisms and algae, which are considered pests under the Act, are assessed by Health Canada before they are available in Canada. The purpose of the assessment is to verify that any risks posed to human health or the environment when the product is used as directed are acceptable, and that the product is effective for its intended purpose.

To determine if a particular product meets this requirement, consumers should check the label for either of the following:

- a registration number issued by Health Canada, which will appear as REGISTRATION NO. 00000 PEST CONTROL PRODUCTS ACT (PCPA) or Reg. No. 00000 PCPA
- the statement SCHEDULED UNDER THE PEST CONTROL PRODUCTS ACT



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Note that this requirement applies only to products that claim to control disease-causing microorganisms such as bacteria or viruses, or products that claim to control algae. Other products such as pH adjusters, oxidizers, chlorine neutralizers and devices used only to dispense pool and spa chemicals are not subject to this requirement. This is because they do not control disease-causing microorganisms or algae. If you are in doubt about whether a product you are considering is subject to the *Pest Control Products Act*, please contact the [Pest Management Information Service](#), listed in this publication.