

# SwimmingPoolsThailand - CHLORINE GUIDE

*Every swimming pool in Thailand pool has a different requirement. Recommendations, suggestions or statements made are intended for the assistance of our customers. They are based upon decades of proven best practice for pools, regional and/or state laws, plus our 45 years experience and judgement; they must not however be regarded as amounting to a legal warranty or as involving any liability on our part and must be read in conjunction with and subject to our conditions of sale.*

Most swimming pools in Thailand are sanitised (disinfected) by using chlorine. This is done by manually adding powder, granules, or tablets in the correct proportions or automatically by a salt water chlorination system. Chlorine eliminates bacteria and algae by **disinfecting** (killing) action, it also **oxidizes** (chemically destroys) other materials such as dirt and chloramines.

When chlorine (in any form, including by salt water chlorinators) is added to water, a weak acid called [Hypochlorous acid](#) is produced. It is this acid, not the chlorine, which gives water its ability to oxidize and disinfect. Proper chlorination and filtration give pool water its clear, sparkling appearance. Filtration alone does not kill bacteria or prevent the growth of algae. Only filters using graded sand, crushed glass, or D.E. powder are suitable for pools. Despite these claims made by the manufacturers, cloth type skimmer-filters do not provide sufficient filtration.

Chlorine exists as a solid, a liquid and a gas. The strength of each type is determined by the amount of chlorine within the material that is effective both as a disinfectant and an oxidizer.

1. **Liquid chlorine** (sodium hypochlorite) contains 12–16% available chlorine. (By contrast, household bleach generally contains about 5% available chlorine.)
2. **Solid chlorine** (powder, granules, tablets)
  - A. Calcium Hypochlorite– 65–75% available chlorine
  - B. Chlorinated Isocyanurates– varying percentages of available chlorine such as T.C.C.A for pools (90%), C. Lithium Hypochlorite – 30–35% available chlorine
3. **Gaseous Chlorine** contains 100% available chlorine. Produced by saltwater chlorination systems. This substance is highly toxic and therefore requires special procedures when it is used. .
4. **Chlorine for swimming pools** is available from SwimmingPoolsThailand in most types and in convenient quantities for shipping.

## CHLORINE DEMAND and FREE CHLORINE RESIDUAL

As chlorine is introduced into pool water, a portion is always consumed during the processes of disinfection and oxidation. That portion of available chlorine consumed is referred to as chlorine demand.

The hypochlorous acid left after the chlorine demand has been satisfied is referred to as the free chlorine residual. This is what we read when we test the pool for chlorine. US and Australian **laws require that the free chlorine residual be at least 1.0 ppm throughout the pool at all times (1.5 ppm if stabilized chlorine is used)**. It is recommended that a residual of 1.5 – 2.5 be maintained with unstabilized chlorine; 2.0 – 2.5 with stabilized chlorine. (See "Cyanuric Acid" description below.

## **POWDER**

Our PoolChlor chlorine powder is the best quality and value currently available in Thailand.(see 'other brands' below.

Available in 5Kg, 20Kg, 50Kg.

Powder dissolves quickly and is used quickly. Best for use in emergencies and when filling or refilling a pool.

## **GRANULES**

Our PoolChlor granulated chlorine is the best quality and value currently available in Thailand.(see 'other brands' below)

Available in 5Kg, 20Kg, 50Kg.

Granules dissolve slightly slower than powder. Usually used for regular dosing but tablets in a fixed tablet dispenser would be a better option for any pools with a volume over 20m<sup>3</sup>

## **TABLETS**

Our PoolChlor tablets are the best quality and value currently available in Thailand.

Available in 1Kg, 5Kg, 20Kg, 50Kg. Packed in 1Kg PVC tubes inside the buckets or barrels

Generally, as powders and granules dissolve very quickly, they are not used for the regular twice weekly addition of chlorine to maintain the correct level. Tablets are designed to be 'slow release' in order to maintain a steady chlorine level in the pool until they are dissolved.

Typically, a 3-inch pool chlorine tablet is designed to chlorinate from 28m<sup>3</sup> to 38m<sup>3</sup> (7,500 to 10,000 gallons US) of water per week (typically about 4 x 6m to 4 x 9m small dip pool), meaning it'll take seven days to dissolve. Water moving over chlorine tablets, as happens in a chlorinator or with tablets designed to be placed in the skimmer, causes them to dissolve more quickly.

To use the right number of tablets, always round your pool volume up to the nearest unit of 20m<sup>3</sup>. For instance, your pool has a capacity of 75m<sup>3</sup> (20,000 gallons,) you would add four chlorine tablets. But if your pool holds just 60m<sup>3</sup> (16,000 gallons,) you'd still use four, three-inch chlorine tablets.

Slow dissolving chlorine systems and automated chlorine dispensing systems will only work when the pool water is already boosted to the correct levels of both chlorine and pH. In other words, tablets and auto systems maintain what is already there.

Tablets are obviously slightly more expensive than powder or granulated chlorine, but the value is in their convenience and ease of use once the pool water is set up correctly.

To get a new pool or a new fill of water up to the correct level in just 24 - 48 hours, we recommend using chlorine powder which will dissolve very quickly. Whatever the method of chlorination, a pool should always be shock chlorinated at least once a month.