

## AVOID RESIDUAL OZONE IN YOUR

# SWIMMING POOL

With the advent of greater awareness of toxicity of chlorine among pool owners and users, it has become norm for requesting pool builders, ozone manufacturers, and other pool accessories suppliers to provide system that is chemical free. More often, pool builders, in their obligation to their clients, promise the clients chemical free systems.

Many fly-by-night sellers of ozone systems have taken advantage of this and have started to communicate that when you use ozone, you do not need chemicals such as chlorine. This is not correct, since a good pool-maintenance schedule will always comprise of addition of various other chemicals to the pool to bring about stabilization of the pool chemistry. You can not avoid this. Ask any water chemist and he will vouch for this.

With ozonated pool, the promise of 'no chlorine' in the pool is not correct. World over, there are standards of residual chlorine with or without ozone and this has never changed so far. Chlorine is required to perform disinfectant property where ozone can not. This is the truth.

What happens when you use residual ozone to replace Chlorine addition? First of all, we need to know the following facts about ozone:

- ▶ Ozone is a toxic gas and needs to be handled well. When ozone is dissolved in the water, the ozone in the water can be stripped and this stripped ozone accumulates on the surface of the water. This ozone is inhaled by the swimmer. On prolong inhalation, this can lead to epithelial cell damage of the lungs.
- ▶ Small amounts of ozone such as 0.05 ppm as claimed by many ozone manufacturers are not sufficient to treat the water in the pool. Why... because the pool is continuously contaminated by body oils, sweat, saliva, bird droppings, and to top it all 0.42 grams of fecal matter by all adult swimmers on an average. These are undisputed facts. This small amount of ozone can not handle such contamination, and only residual chlorine can.
- ▶ Measurement of ozone residual in the water is an expensive process and we can never control the residual even if we claim it is only 0.05 ppm.

### Then Why Use Ozone at All?

Chlorine is used only to perform residual disinfectant property in the pool

water. All other anti-bacterial effects, any viral effects, odour and taste removal, iron and manganese removal, reduction of Pseudomonas and Legionella in the pool, clarity to pool water, removal of bio films and keeping the pipes and the tanks clean, are all wonderful properties of ozone.

Can you ever have a chlorine free pool? The answer is 'yes'. Instead of chlorine, we can use bromine disinfection which is as good as chlorine and lesser toxic than chlorine. When you use bromide salts in the pool, bromine is liberated in the pool by ozone (HOBr) and this acts in the same way as chlorine. After action, bromine is again converted to bromide salts. This bromine disinfection is quite popular abroad.

In the indoor pools, that have an acclimatized environment, you can use ozone and can avoid residual chlorine, provided the dose of ozone is appropriate. Also, if the bather load is very high, perhaps even residual chlorine may be required even in indoor pools.

The risk of using residual ozone goes beyond health. Most pool owners/users are high net worth individuals, well informed and health conscious. Using ozone residual in the pool will lead to legal complications, against the pool builder, pool maintenance person, pool owner and also the ozone supplier. This is best avoided if we stick to accepted pool treatment process.

Claims that chlorine free pools are following German and Australian standards is totally wrong as both Australian and German standards require complete removal of ozone before it enters the pool and maintaining residual ozone at 0.5 ppm. Few unsuspecting clients in India have fallen prey to these chlorine-free concepts which is just not safe for the swimmers. It is suggested to any client that he verifies these standards before accepting any such proposal from ozone manufactures to ensure that what he gets is totally safe for his and his family's health.

**Contributed By: V. Baratharaj - CMD, OTSIL**

Ozone Technologies & Systems India Private Limited  
E-mail: [otsil@vsnl.com](mailto:otsil@vsnl.com), +91 44 2492 8414/ 4211 8266,  
Website: [www.otsil.net](http://www.otsil.net)