

# OZONE PRECAUTIONS IN SWIMMING POOLS

## Introduction

General opinion about ozone in the swimming pool industry is that ozone is a magical wand. Many ozone manufacturers make tall claims and this misleads the consultants, the pool builders and the end users. The final result looks such that ozone does not seem to work, and the pool user is frustrated.

Here are some of the precautions, which a consultant, architect, and pool builder should consider while recommending ozone to the pool owner.

## Ozone Does Not Perform Magic

With ozonation, you still need bit of chlorine, and pool cleaning activities like suction sweeping, filter back washing, scrubbing, etc. It is only the frequency of shock chlorination that comes down and daily usage of chlorine can be drastically reduced if the ozone system is designed well. Other activities should remain.

## Low Ozone Dose Produces More Harmful Effects

Pool users need to be careful here. A badly designed ozone system, and a low quality ozone generator (assembled ozone generators and UV lamp ozone systems) that generate very minute quantities of ozone (not known to the client), a badly designed ozone injection system, can all contribute to low ozone availability. In these cases, actually the bacterial counts can increase which makes the chlorination ineffective. Algae blooms are very frequent in these pools since the ozone breaks down organics in the water and makes it more assimilable for the algae and bacteria. In fact, you need to use more chlorine than without ozone. Pool users fall sick very often as the water is always contaminated.

## Badly Designed Ventury Multiplies Problems

Ventury is the heart of an ozone application and a bad ventury will add to the problems. Produced ozone needs to be introduced into the water and system design should guarantee more than 99% ozone mass transfer. A local or a fabricated ventury can not guarantee this and, as a result, the ozone leaks within the plant room causing worries of ozone toxicity. This will also affect the pool ozonation process. Care should be taken that apart from a good ozone generator, you need a good ozone injection system that includes a good ozone resistant pump and a good back flow preventer.

## You Smell Ozone at 0.01 Grams per Hour

Ozone is such a strong smelling gas that you nose can identify ozone as little as 0.01 grams per hour. This is 1000 times lower than the actual ozone you require for swimming pool ozonation. It also means that just because you smell ozone, it does not ensure that the right quantity of ozone is being generated by the equipment. Most ozone suppliers do not have ozone measuring devices as each analyzer which can cost up to Rs. 5 lakhs. Buying ozone from the front benchers, fly-by-night operators, ozone assemblers add to this risk. Only an established "Ozone Manufacturer" (not assembler) can guarantee you a time tested ozone machine, a fail-proof ozone injection design, a good service network and required technical support.

## You Need Good Technical Support

To recommend ozone, you need a good technical support. Ozone is a chemical process and requires thorough knowledge to design and subsequently trouble shoot if at all problems arising at a later stage. The manufacturer should be aware of pool balancing methods essential for ozonation. This is the single most problematic issue during ozonation of swimming pools.

It may be noted that packaged water process require ozone in very small quantities. There are many small ozone manufacturers and dealers catering exclusively to these segments. We need to make a conscious effort to check out on the reliability of the equipment and equipment manufacturer both in terms of ozone generation as well as technical support.

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