



# REPORT TECHSOL WATER POOL SYSTEM



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## ECOLOGICAL POOL WATER TREATMENT SYSTEM

### DESCRIPTION

4-element system designed for the ecological treatment of swimming pool water. Add 4 different technologies to maximize system performance.

Thanks to the synergy of the 4 technologies adapted to water treatment for swimming pools, we achieve a series of substantial improvements for our comfort, health and economy.

It is an exclusive system for the bio-sustainable and ecological purification of pool water. The system adds technologies, combinable with each other depending on the project or desired needs.

Our TECHSOL WATER system has been verified in pools of all types, indoor, outdoor, small dimensions (individual pools), large pools (community pools, hotels, amusement parks and Olympic pools).

The 4 technologies have been adapted to ecological water treatment, but they are known technologies in other areas such as the sanitary area, water purification, chemical industry...etc. Therefore, the safety of its use and technological performance is total.

The system consists of 4 elements:

#### ***ZEOTHERM (see technical sheet)***

#### ***Filter medium, based on natural silicate of volcanic origin***

It is a mineral with a double heat treatment, which is installed inside the filter, replacing silica or glass sand, and whose main function is to regulate the pH naturally (the most important thing in an aqueous environment). to have a regular stability of the water), the filtering of 100% of the contaminants since there is a difference in charge between the contaminants and the mineral. Something that does not happen with glass or sand, which only traps as a physical barrier, allowing the smallest contaminants to pass through. The difference in water transparency is total.

As an example, GAETA HUGUET's Olympic pool in Castellón, by changing the glass for ZEOTHERM they gained a minimum visibility of 2 swimming lanes. Very valuable for sports championships in indoor pools.

It was also valued very positively in the hotels, since the visual sensation of the water changed completely.

### GAETA HUGET CASTELLÓN OLYMPIC POOL



90% REDUCTION USE OF  
CHEMICALS

BETTER TRANSPARENCY  
OF THE WATER

NATURAL PH REGULATION



### *COPPER IONIZER (see technical sheet)*

*Copper ion generator for disinfection and anti-algae.*

A copper pool ionizer is a device designed to keep water clean and free of algae, bacteria and other microorganisms by controlled release of copper ions into water.

It is placed, like the reactor, in the filter outlet pipe, and a double ionizer system can also be placed, before the filter and after.

Placing it before the filter will help us keep the filter in optimal conditions, without microorganisms (Biofilm) inside the filter.

## WATER PARK VALENCIA

SWIMMING POOL WITH  
ZEOTHERM AND NANOLAYER  
SYSTEM

CHLORINE USE REDUCTION

NATURAL REGULATION  
OF THE PH

GREATER DURABILITY OF  
THE POOL SURFACE



### *TS PHOTOCATALYTIC REACTOR (see technical sheet)*

*Advanced water purification system without the use of chemicals.*

It is a metal reactor, connected to the filter outlet pipe.

The technology is based on the use of nanotechnology of Titanium Dioxide (TiO<sub>2</sub>) photocatalysts in nanometric size WITH QUANTUM POINT TECHNOLOGY and Ultraviolet Light, key elements for the water purification process without chemicals. With its use, viruses, bacteria and microorganisms are eliminated from the water, as well as creams and other chemicals that may be present in pool water, and it is also capable of reducing contamination caused by arsenic, heavy metals, mercury, lead, as well as herbicides, pesticides and petrochemicals.

The process called Heterogeneous Photocatalysis consists of the activation of a catalyst by irradiating it with Ultraviolet Light lamps that emit at precise wavelengths. In this process, reactions occur that cause an enormous generation of HYDROXYL Radical (OH<sup>-</sup>), SUPEROXIDE Radical (O<sub>2</sub><sup>-</sup>) and HYDROPEROXIDE (H<sub>2</sub>O<sub>2</sub>).



Oxidation potential is the tendency to lose electrons from a chemical substance or element. It is generally measured in volts and arises from the comparison against an ideal hydrogen electrode.

OXIDATION POTENTIAL OF OXIDIZING AGENTS

Oxidante	E°/V	Oxidante	E°/V
F <sub>2</sub>	3.06	KMnO <sub>4</sub>	1.70
•OH	2.80	HO <sub>2</sub> <sup>-</sup>	1.70
O <sub>2</sub>	2.42	HOCl	1.49
O <sub>3</sub>	2.01	Cl <sub>2</sub>	1.27
H <sub>2</sub> SO <sub>5</sub>	1.81	ClO <sub>2</sub>	1.27
H <sub>2</sub> O <sub>2</sub>	1.76	O <sub>2</sub>	1.20

**PHOTOCOAT NANOCOAT (see technical sheet)**  
**Advanced photocatalytic nanolayer.**

A nanolayer consists of a thin surface protective film formed by nanoparticles. Our nanoparticles come dispersed in different media, mostly aqueous, odorless and non-toxic.

Being prepared for use on different materials. These nanotechnological coatings are based on different elements, such as Nano Titanium Dioxide (TiO<sub>2</sub>), ideal for creating photocatalytic nanolayers, although they are combined with other elements such as silver (Ag) or Copper (Cu) to improve their biocidal capabilities.

The product comes in a liquid version, and can be applied in areas where the sun hits regularly, as it acts as a disinfectant, activating with the sun's energy. Therefore, this natural reaction with the sun provides us with an improvement in water quality without the use of chemicals.

It is usually applied in the areas with the most sun, the first 50 cm of the pool walls, only where there is coating/water contact. Its use is also recommended in water outlet areas when there is a compensation glass.

**Properties obtained with the TECHSOL WATER system**

- Total or partial elimination of the use of chemicals,
- The reaction obtained is 7 times more powerful than the use of chlorine.
- Regulation of the pH of the water naturally, maintaining it in the recommended values.
- Removal of lime and heavy metals.
- Removal of difficult sunscreens from water.
- Reduction in the number of filter washes.
- Reduction of energy used for water management.
- Greater transparency, obtaining a unique sensation for the elimination of 100% of contaminants.
- Elimination of algae without the use of chemicals.
- It uses the sun's energy to purify water.