

Basic knowledge of wastewater

Wastewater as a vehicle for disease transmission

The pathogenic microorganisms pass into the wastewater becoming a vehicle for the transmission of diseases.

The inadequate management of these waters leads to the contamination of the water that millions of people drink, estimating 502,000 deaths per year from diarrhea (WHO, 2019).

Bacteria, viruses, and parasites (protozoa and helminths) are the main pathogens that can be found in urban wastewater.

Is it mandatory to disinfect treated wastewater?

In some countries, disinfection of treated wastewater is mandatory, while in others, such as in Spain, this obligation is conditioned by the destination of these waters, or by the use made of the same.

Difference between disinfection and sterilization

The objective of disinfection is the selective elimination or deactivation of microorganisms that can cause disease; sterilization leads to the destruction of all organisms.

How is treated wastewater disinfected?

Disinfection treatments are classified according to their nature:

Chemical treatments: chlorination and ozonation

Physical treatments: UV radiation and filtration

Disinfection must guarantee the sanitary quality of the water over a long period of time.

Factors influencing disinfection efficiency

- Disinfectant-water contact time: for a given concentration of disinfectant, the mortality of pathogenic organisms increases with increasing contact time.
- Temperature: the increase in temperature produces an increase in the mortality rate of pathogenic organisms.
- The type and concentration of the chemical agent and the intensity and nature of the physical agent.
- The number of pathogenic organisms: the higher the concentration of pathogenic organisms, the longer the contact time necessary to achieve a certain mortality from them.
- The type of pathogenic organisms.
- Nature of the liquid medium in which they are found.

*Recommendation subject to the legislation of each country

