

USE OF KINETIC TECHNOLOGY IN HOSPITALS

TO REDUCE THE INCIDENCE OF INTRAHOSPITAL INFECTIONS AT PATIENTS

INTRODUCTION

Annually In Germany more than 1 million people are infected in hospitals and about 40.000 people die of various immunodeficiency disorders due to various infections.

Many infections are caused by bacteria in the water as such as:

Legionella: In 90% is the causative agent of Legionella pneumophila, which resides in a temperature range of 25-45°C, with an optimum at 35°C. Legionella infection is usually the result of an inhalation of an aerosol containing bacteria and may come from any area of contaminated water. By drinking contaminated water, person cannot normally be infected because of the destruction of pathogens with hydrochloric acid in the stomach, except in the case of a highly depressed immune system as part of respiratory infection (e.g. aspiration of gastric contents).

Pseudomonas: The type species is *P. aeruginosa*, which is widespread in nature, especially in soil and water. It is a pathogen for humans and animals. It causes the purulent processes and the color of the excretion is green. The problem: it is resistant to most antibiotics, it is transmitted by touch.

Acinetobacter: Acinetobacter bacteria is considered to be non-dangerous for healthy people but it can cause severe life-threatening infections in immunocompromised patients and other seriously ill patients. It is often present in the hospital (wash basins, catheters, air, etc.).

Stenotrophomonas: often colonizes damp surfaces, such as pipes used for water supply or various ventilation systems. Stenotrophomonas infection is associated with high morbidity and mortality in severely immunocompromised and exhausted patients.

Aeromonas: The two main diseases associated with Aeromonas are gastroenteritis and wound infection. Gastroenteritis usually occurs when ingested contaminated water or food, and wound infection due to exposure to contaminated water.

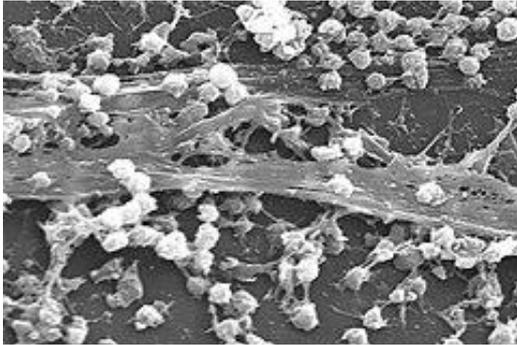
Mycobacterium: It is usually difficult to treat infections with Mycobacterium. The organisms are solid because of their cell wall, which is neither real Gram negative nor positive.

INTERNAL NETWORK SUPERVISION IN THE HOSPITAL

Internal control of the quality of drinking water in a facility is obligated by the manager or commission for the management of hospital infections. In most cases, the occurrence of bacteria in the network is created due to the ideal conditions for their existence, such as:

- Water flow in water pipes is too slow
- Temperature of water
- Lime scale
- Materials of assembling parts in installations
- Oxygen from atmosphere
- Incoming unwanted water parameters associated with the water source

All of these influences are very important for creating bio-film bacteria on and in mechanical elements for delivering water to users. Disinfection with chlorine is largely ineffective in the destruction of bacteria in biofilm.



Biofilm is a set of microorganisms and their extracellular products as a binding member, usually attached to a biogenic or abiogenic basis. **99% of all bacteria live in biofilm.**

Figure 1.1: A collection of microorganisms (biofilm)

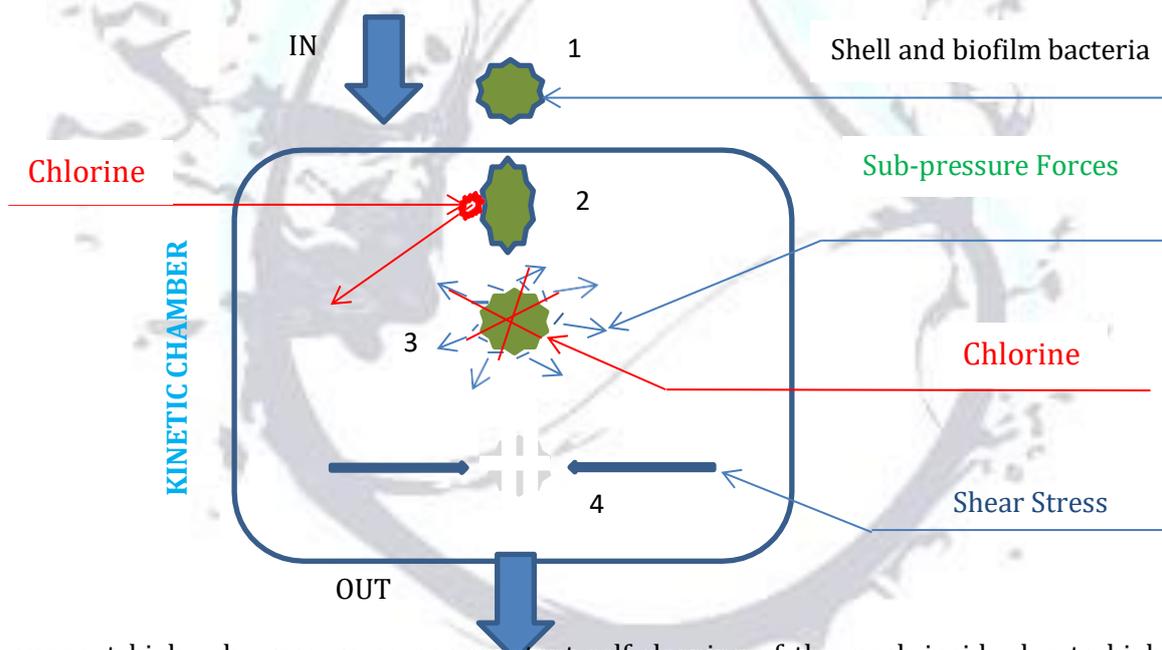
batteries and shower grips.

With the Kinetic Reactors, we can improve the oxidation of organic and inorganic substances in water, which prevents the loading of iron sludge and the formation of biofilm inside the mash for sanitary

Due to the strong degassing of CO_2 , the lime is excreted in the structure of aragonite (it does not fit into hardware elements and is powdery and non-gluing crystalline structure).

We can improve the disinfection of drinking water within the kinetic chamber of Kinetic Reactor where the presence of chlorine in water is, due to strong under pressure forces, where we break the bonds of cohesion forces and increase the surface of water. The bacteria with their protective shell and with the biofilm are powerless because they are peeled by the strong vacuum and shear forces in the chamber. When the bacteria is exposed like that it can easily be destroyed by chlorine.

Figure 1.2: Kinetic Chamber Process



Permanent high sub-pressure causes constant self-cleaning of the mesh inside due to higher suction depression, as in the known sanitary batteries.

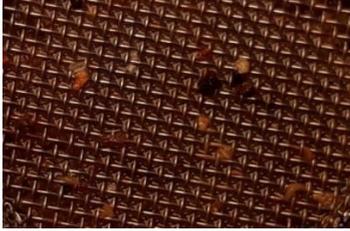
PRODUCTS FOR USE IN HOSPITALS WITH KINETIC TECHNOLOGY

What can you expect ...

- Kinetic Reactor for the sanitary battery (improved hygiene inside the Kinetic Reactor, improved disinfection of drinking water, no more problems with scale)
- Shower Heads (improved hygiene inside the shower grip, improved disinfection of water, no more problems with scale)

- Kinetic Technology for adiabatic systems and cooling towers (ventilation, air conditioning)
- Reduced Cleaning and internal network conditioning

Examples on faucet mesh after 6 months:



Standard aerator



Kinetic Reactor



PRIPRAVIL J in P :

