

Applications of DESY in hospital setup

The concept of electrolyzing saline to create a disinfectant or antiseptics is appealing because the basic materials of saline and electricity are inexpensive and the end product (i.e., water) does not damage the environment. The main products of this water are hypochlorous acid (e.g., at a concentration of about 144 mg/L). The electrolysed water is nontoxic to biologic tissues. Electrolyzed Oxidizing Water is safe, non-toxic, and non-irritant and pertains to FDA, USDA, and EPA. It can be used to sanitize hospital rooms, hospital beds, chairs, instruments, and equipment.

Electrolysed water anolyte (DESY) is widely used in healthcare facilities in a variety of settings. The applications are as follows:

- A) **Hospital Sanitation**-DESY obtained from AQUECA W40 can be used to sanitize all contact surfaces in the hospital including patient rooms, hospital beds, chairs, medical equipment and instruments, nursing stations, surgery rooms, floors, and bathrooms.

Electrolyzed water is:-

- 100 times more biocidal than chlorine bleach
- Effective against G+ and G- bacteria
- Effective against Clostridium difficile spores
- Effective against VRE, MRSA, and MRSE
- Effective against Mycobacterium tuberculosis
- Effective against HIV, HBV, HCV, and CMV
- No high temperatures are necessary
- Most effective between 50-86 °F (10-30 °C)
- Does not cause irritation, safe on eyes and skin

B) Other applications

1. Surface sterilization
2. Disinfecting tonometer heads
3. Spot-disinfection of countertops and floors.
4. Tuberculocidal disinfectant
5. Decontaminating blood spills (i.e., drops of blood)
6. Irrigating agent in endodontic treatment
7. Disinfectant for manikins
8. Laundry
9. Dental appliances
10. Hydrotherapy tanks
11. Regulated medical waste before disposal
12. Water distribution system in hemodialysis centers and hemodialysis machines.

Applications of LIMY for hospitals

Electrolyzed water is produced by electrolysis of dilute sodium chloride solutions in an electrolysis chamber, divided by a diaphragm, which separates the anode and the cathode. During electrolysis disinfectant (DESY) is generated at the anode and highly alkaline solution is generated at the cathode. The alkaline pH of cathode solution (LIMY) is due to the presence of NaOH. LIMY has wide range of applications:

- **Hospital oven, Gas burners, Chimneys and drain cleaner:** Most of the kitchen equipment's become dirty because of deposition of fat and grease, similarly, most pipes get clogged due to accumulation of combination of fats and grease. LIMY that contain sodium hydroxide convert the fats to soap, which dissolves in water.
- **pH control**
- **Water demineralisation:** Regeneration of ion exchangers
- **Drinking water production:** In drinking water treatment, LIMY can be used instead of powdered alkalis such as lime or soda ash, because the systems for adding sodium hydroxide are less complicated and require less maintenance. The chemical can also be used in place of lime to soften water by removing carbonate and noncarbonate hardness. Sodium hydroxide can also partially or fully substitute for the soda ash requirement.