

### **Why Hypochlorous acid is the ultimate disinfectant?**

Hypochlorous acid is a natural substance our body produces as a first line defense against pathogens. It is extremely safe, bio- degradable and non-corrosive. It is nonflammable and chemical free. The material is FDA approved for skin and food contact. This material was proven, by us, to be effective not just against the Corona virus but also against harmful pathogens like MRSA and positive gram bacteria. Other commercial disinfectants are by far more irritants, corrosive and much less effective given the same active material concentration (0.005-0.02%).

### **What is our uniqueness?**

In terms of disinfectant production, If we are talking on producing the material on site, the disinfectant production is a membraneless process (requires low maintenance) and a production of a caustic by product, thing that may require additional care in terms of regulation, is avoided. If the material is produced, not by demand, keeping the active material stable along time is challenging. Keeping the material stable often pushes the solution components to be not its optimal pH working range, which, in turn, requires working with higher free chlorine content to reach good anti-bacterial efficacy and considerable part of the material is in a "bleach" form. Sometimes, buffer additives and high table salt are added to disinfectant solution, in order to reach stabilization, which makes the solution corrosive to a plenty types of surfaces. Our team think in different manner of how to keep solution stable over one year and optimally active without the addition of extra salt, additives and still maintaining working at the ideal working pH range. Moreover, our team at Bar-Ilan university, keep validating that the produced solution is effective on a routinely basis. Our experts team consists of chemists, electrochemist and microbiologists always keep thinking how to improve our product and ready for any challenge (like preventing infection transfer in the fish industry). The combination between team of experts from the engineering world, with dozens years of experience, providing optimal and cleaver design of sanitizing instruments, working together with team of experts from the academic world makes the perfect team for you for creating better and healthier environment.

### **How the material is produced?**

We can produce the material on site with our special design, membrane-less reactors. Our special design ensures high yield of material with low content of salt in the feed tap water, without the addition of buffer additives and still, providing the optimal working pH range, without production of caustic by products. The system requires low maintenance and free of scaling. Moreover, production of material on-site is favorable in terms of environmental aspects, cost effective and eco-friendly. We also developed a method for prolonging the shelf life of the disinfectant product, without the addition of additives, with low salt content and in contrary to

other products, the working pH range is the optimal. Therefore, our product is very efficient and the least corrosive among others.

**What is the purpose of sanitary tunnels and how effective is our sanitary tunnels?**

The main purpose of the sanitary tunnels is to lower the chances of community spread of harmful pathogens, in crowded places, like entrances to airports, and to lower the chances of a person to get infected from another person by droplet infection. The combination of optimal tunnel design, with 3600 sanitation coverage, even at area that are not directly exposed to tunnel's nozzles (in comparison to other competitors), and optimal wisely prepared disinfectant solution, promises the ultimate tool for lowering chances of community spread of viruses. Nonetheless, our sanitary tunnel is not a substitute for the usual required precautions, like respiratory masks and social distancing. Therefore, people entering the tunnel must wearing face masks and having body temperature check before entering the tunnel.

**How effective is our tunnel?**

A simple calculation: Human average surface area of adult is about 2 m<sup>2</sup>. For 3 seconds of exposure, If we assume that half of the active material is left non reacted, then we divide the neutralized viruses capability by 40000 cm<sup>2</sup> to have around 42,000 virus neutralization units per cm<sup>2</sup> per second. In 3 seconds we have around 126,000 virus neutralization units per cm<sup>2</sup> per second, which is more than enough to disinfect our cloths and the exposed parts of our body.

**Do people get a spray that would make their clothes wet or is it just a gentle mist that will easily dry quickly?**

It is a gentle mist that dries easily. The feeling is refreshing like walking through "non-condensed cloud". We are also controlling the droplet size. Although, there is no evidence for adverse effect of breathing our disinfectant material, we control the droplet size, in a way, it will not reach the respiratory system.

**Does this only work for people or could it sanitize objects and equipment that can be pushed or carried through it?**

The tunnel is designed in a way that full coverage is obtained. Since the disinfectant material is noncorrosive, equipment can be sanitized as well.

For people who are not sick with COVID-19, do you think this could get them back to some idea of a normal way of life for work, shopping or leisure activities?

This is certainly one of the purposes of our sanitary tunnels. The tunnels are located in crowded places, like entrances to hospital, where the chances for virus spreading are much higher, and installation of sanitary tunnels can really promote opening of shopping centers, theaters, etc.

**How long does someone need to be in the tunnel for it to sanitize them?**

Exposure of 3 seconds is enough for full coverage and sufficient of active material to eliminate viruses existing on infected surface. Keep in mind that the disinfectant material stays on a person for a while. Since the disinfectant material is bio-degradable is eventually decomposes into water.

Is there a risk seen with this that it will cause people to feel they are completely protected from COVID-19 and other viruses even though it will only sanitize what is on them... not in them?

As mentioned, the sanitary tunnel does not obviate the usual required precaution's; wearing face masks and social distancing. The tunnels are located in prone virus spreading places, in bottlenecks or crowded places, like entrances to airports, where the chances to get infected are much higher. In addition, people entering the tunnel are obligated to wear face masks and their body temperature is checked.

In general we can outline what makes us different in comparison to our competitors:

1. When the material is produced on site, there is no caustic by product.
2. The production unit is fully automated and requires minimum maintenance.
3. Our team comprising engineers, electrochemist and microbiologists covering all aspects.
4. We have technologies to keep the material stable after it is produced.
5. We can tailor the product in accordance to the desired application considering all the parameters.
6. We produce the material with its optimal composition.
7. Salinity is very low and so the corrosion potential of the solution