

Mushrooming Of Disinfection Mist Tunnel

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“Food grade Sodium Hypo-Chlorite NaOCl is 5 - 6 % in concentration, which is 50,000 ppm”

“Chlorine based disinfections need rinsing as they are dangerous for human eyes & skin”

“Chlorine based chemicals are recommended to disinfect equipment's and not human beings”

“Chlorine based disinfectants in mist form on humans are banned by WHO”

Post Corona pandemic the world is flooded with Mushrooms of so called “Disinfection Mist Tunnel” (DMT).

What is Disinfection Mist Tunnel:

The name suggests that there are two major components involved in DMT, viz. mist generator & tunnel.



Disinfection tunnel is an enclosed space where a person can stand or walk through & from all directions, water mist covers the whole tunnel space. Mist generator has a storage water tank of 200 – 500 ltrs capacity in which disinfectant chemical is added in this water. The other components are pressure pump and atomizer nozzles, which forms a fine mist. Different disinfectant chemicals like bleach, sodium hypochlorite, hydrogen peroxide, alcohol, some proprietary chemicals etc. are used as per design criteria. This design criteria depends on volume of the tunnel, quantity of the mist, concentration of the disinfectant in the tank & mist, time inside tunnel & disinfection Concentration x Time (CT) value.

Penetrate & Treat

“Electrochemical Oxidation [ECO] & Bipolar Oxygen Ionisation [BOI] are the killers of any Bacteria & Virus”

10 – 20 ml is not sufficient to cover complete person.

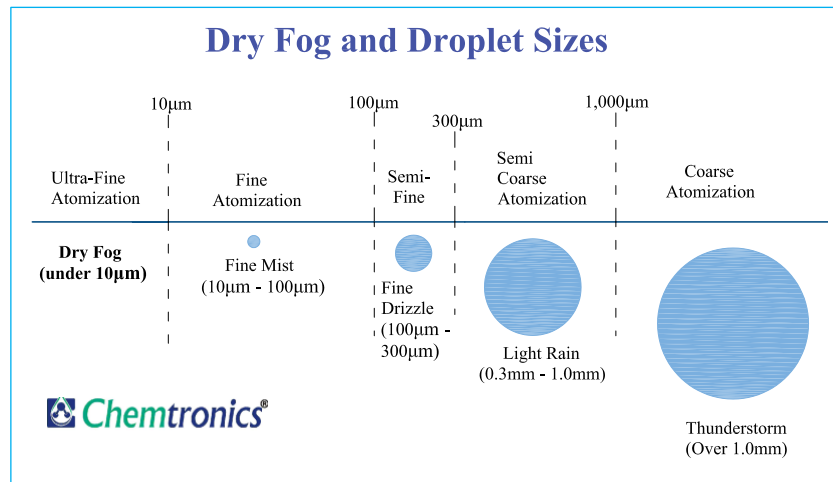
100 – 500 ppm of Chlorine on human is dangerous.

Options :

1. Dry Cloud Coverage.
2. Green Disinfectant
3. Safe & Sufficient

Myth revealed about Disinfection Mist Tunnel:

First let us understand what is mist & water droplet; below figure shows size of different water molecules. When water droplets coming from any nozzle are having



size, more than 300 micron is called ‘spray’ & if below 100 micron it is classified as ‘mist’.

In case of a tunnel, spray cannot be used, as a person will become wet in a few seconds (5-10 sec.). So in any tunnel design, mist of 100 microns is formed. Generating mist of this size, requires a nozzle size of around 0.2 mm & each of these nozzles can disperse 200 – 300 ml of water per minute. Generally 10 nozzles are required for a tunnel with a dimensions 1m x 1m x 2.3m. Now let us calculate what is the quantity of disinfection solution that covers a person in mist form.

Calculation - Water quantity in Mist

Flow per nozzle	: 300 ml/min.
That is	: 5 ml/sec.
No. of nozzles	: 10 nos.
Person in tunnel	: 10 sec.
Total qnt. Of liquid	: 500 ml
Per 10 sec per 10 nozzles	
Volume of the tunnel	: 2.3 m ³
(1m x 1m x 2.3m)	
Volume of a person	: 0.080 m ³
% volume of a person	: 3.5 %
Total liquid on person	: 17.5 ml

Calculation – Quantity of Disinfectant

Sodium Hypo-Chlorite	: 5.0% Conc.
That is	: 50 g/ltrs.
That is	: 50,000 ppm
Dilution in water	: 1 ltr in 100 ltrs
That is	: 500 ppm
That is	: 50 g/100 ltrs
That is	: 0.5 mg/ml

So in 17.5 ml quantity of solution, Sodiun Hypo-Chlotite is 8.7 mg (17.5 ml x 0.5 mg/ml = 8.7 mg)

Now that you have some idea about the DMT as a concept, we at Chemtronics are happy to inform that we have an indigenous solution, that under controlled dosage, achieves complete disinfection, minus any of the negatives associated with wet misting. Contact us to know more about our “Dry Cloud Coverage” technology.

Conclusion:

17.5 ml of disinfectant solution is too less to cover the complete human body. 500 ppm of chlorine concentration on human body is a major health hazard.