think:water

Via delle Pezze 35 35013 Cittadella (PD) Italy Cap. Soc. € 90.000,00 i.v. - C.F. e P.I. IT 03985480288 REA PD: 352571 - Codice SDI: AU7YEU4

T. +39 049 9403792 F. +39 049 5971699 E. info@thinkwater.com

WITH RO TECHNOLOGY THINK:WATER PROFINE PROTECTION AGAINST BACTERIA AND VIRUS

We are all facing a new planetary challenge. The Covid-19 pandemic requires us to strictly observe hygiene regulations for our safety. The TW Profine team wants to contribute at its best to better deal with this moment. In fact, today more than ever, it becomes important to inform our customers and partners about capabilities in water filtering solutions, also in terms of virus removal.

TW produces reverse osmosis systems from more than 20 years. Since the very first day, the company has always been focused to investigate further on the issues of this specific treatment. These daily efforts have allowed the TW Profine team to reach important international awards, enriching itself with a unique know-how.

Reverse osmosis is worldwide recognised as the most effective treatment system compared to microfiltration, ultrafiltration, nanofiltration and ultraviolet treatments; as mentioned by the Center for Disease Control and Prevention (*CDC Center for Disease Control and Prevention*). In fact, **reverse osmosis is also defined as hyperfiltration** for its great effectiveness, both physical and mechanical, to remove substances from water.

Reverse osmosis is a process that involves semipermeable membranes to separate salts dissolved in water. Thanks to the membrane, the solute is retained, preventing its passage thus obtaining a pure fluid in the outflow. To let osmosis process work at its best, pre-filters are normally needed.

The reverse osmosis is considered hyperfiltration, that means the max possible filtration level available in the market at the moment. The holes size of an osmotic membrane is less than 1 nanometre (the nanofiltration is between 1-100 nanometres). The dimensions of the pathogen SARS-CoV-2 are between 65 and 100 nanometres. Make reference to the table here below where we report the average value of 80 nm. Other viruses size around 20 nanometres. The minimum size of a common bacteria is 200 nanometres. It is

evident that a working reverse osmosis system that has received the proper maintenance manages to eradicate these microorganisms.

thinkwater.com UNI EN ISO 9001:2015 UNI EN ISO 14001:2015 ICIM Food Contact Materials ICIM Water Contact Materials

think:water

Via delle Pezze 35 35013 Cittadella (PD) Italy Cap. Soc. € 90.000,00 i.v. - C.F. e P.I. IT 03985480288 REA PD: 352571 - Codice SDI: AU7YEU4

T. +39 049 9403792 F. +39 049 5971699 E. info@thinkwater.com

DIMENSION SCALE - nm



The CDC highlights in fact, in its comparative water treatment studies, the absolute effectiveness of the osmosis process to remove several microbes.

In detail:

Reverse osmosis systems have a very *high effect* in the protozoa removal (*such as Cryptosporidium and Giardia*);

Reverse osmosis systems have a very high effect in the bacteria removal (such as Campylobacter, Salmonella, Shigella, E. coli);

Reverse osmosis systems have a very high effect in virus's removal (such as Enteric, Hepatitis A, Norovirus, Rotavirus);

Reverse osmosis systems remove common chemical contaminants such as metal ions, aqueous salts including sodium, chloride, copper, chromium and lead; they can reduce Arsenic.

In conclusion, this CDC study confirms that reverse osmosis is the only high efficiency water treatment, even compared to any other treatment, in the removal of pathogens eventually present in the water.

Technical Office Coordinator Massimo G. Babolin

CEO think:water Franco Carlotto

thinkwater.com UNI EN ISO 9001:2015 UNI EN ISO 14001:2015 ICIM Food Contact Materials ICIM Water Contact Materials