

GROWTH IS THE BY PRODUCT OF THE VISIBILITY



INSIGHTS

Pharma Access covers recent international endeavours and opportunities in Middle East & African region. A start off with pleasant opening, find out how we are prevailing in the pharmaceutical engineering industry with roots of knowledge & plausibility. The sleek approach along with veiling on Ozone sanitization pharmaceutical water system, how it's more efficient & safe to implement to make the sanitization process more streamlined. This article has provided the benefits & also know how its trending in pharmaceutical industry.

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PHARMA ACCESS EXHIBITING EXCELLENCE AT RECENT MAGHREB & ABU DHABI EXPO 2019



TEAM VISIBILITY IS ESSENTIAL FOR GROWTH:

Teamwork & Communication can go far. If your team is strong you can conquer challenges at any step of the way. Just how we were able to do so in all exhibitions we attended this year. Our team successfully managed to connect, explicate our offerings. CPHI being the only event dedicated to Pharma manufacturing in the MENA region returned for the second time in Abu Dhabi welcoming about 3100 visitors from 98 countries.

A lot of people with purchasing power from across UAE, Saudi Arabia, Kuwait, Oman and Egypt visited the 3-day event taking advantage of the extensive platform set by CPHI to connect prominent and pioneering pharma brands and investors with companies covering every step of the pharma supply chain from drug research to finished dosage including pharma ingredients, product manufacturers, supplies and buyers. Pharma Access plays a unique role in fulfilling their expectation by sharing their experience in Project Designing and Turnkey Project Execution over the last 18 years and complying with the guidelines set by cGMP continually and excellently thus making it a one stop solution for any potential investors."

Pharma Tech

Ozone sanitization: What, why & How it is evolving in the pharmaceutical industry:

Ozone Sanitization Technology began in 1980s and has grown steadily ever since. It's one of nature's powerful sanitizers. Ozone is an organic sanitizing technology that has been safely used for years.

Ozone is a stand-alone sanitizer which simplifies sanitization, and is produced as needed on site, dissipates after use and minimizes the purchase, storage, mixing and disposal of chemicals pose the Pharma industry with an opportunity to approach its operations and R&D differently. It can effectively contribute to make processes efficient and cost effective in development and treatment of sanitization.

Ozone is used as an alternative to heat sanitization with hot water and steam or chemical disinfection using chlorine, chlorides, peroxides and other chemicals. It is one of the strongest commercially available oxidants, with a disinfecting strength 3,000 times that of chlorine due to its high eV potential. Ozone effectively kills bacteria, viruses, yeast, fungi and other microbes as a function of time, susceptibility of the target organisms (action), ozone concentration and water temperature.

Among the alternatives available for water sanitization, ozone is recognized as an excellent option for disinfecting biopharmaceutical water systems. Ozone (O₃) is a highly reactive molecule made up of three atoms of oxygen, which decays back to oxygen. Care must be taken because ozone is also a toxic gas characterized by a strong, pungent smell.

Ozone oxidizes organic material at a rate 3,100 times that of chlorine. Ozone kills bacteria and other harmful organisms while continuously disinfecting surfaces and tools during production. The results reduce cross contamination and control biofilm build up. The same oxidation process that kills bacteria also breaks the bond between soils and product contact surfaces, allowing for longer sanitized production hours. No harsh chemicals or time consuming steps are needed to sanitize and clean.

Ozone occurs naturally but can be generated. The two most common generation methods for pharmaceutical use include silent discharge generation and electrolytic generation. Electrolytic ozone is created when high voltage passes between parallel metal electrodes and through a liquid containing oxygen, e.g., The process water. Electrolytically generated ozone is often used for small quantities of ozone or lower flows. Ozone generated by silent discharge is created when a current-controlled electric discharge is released between high purity refractory metal electrodes into a gas containing oxygen. The ozone is then injected into the water system. Ozone generated by silent discharge provides greater flexibility in terms of controlling ozone concentrations to the amount needed, as it is only limited by the oxygen content of the air rather than by the oxygen usable from the water.

LET US UNDERSTAND THE EXTENSIVE BENEFITS THAT CAN CREATE A POSITIVE DIFFERENCE FOR THE PHARMACEUTICAL SECTOR.

1. Most powerful broad spectrum microbiological control agent available.
2. 51% more powerful in killing bacteria.
3. Chemical free No-toxic by-products hence environmental friendly.
4. FDA approved.
5. Extremely effective disinfectant at very low concentration. Destroys bacteria, viruses, Fungai, algae, yeast, Mould and parasites.
6. Eliminate use of hot water and conventional sanitizers.
7. Very inexpensive to produce.
8. Dissipates in minutes leaving only clean water behind.
9. Ozone oxidizes contaminants directly or through the formation of hydroxyl radicals.
10. Ozone increases the redox potential of water.

FEW DISADVANTAGES OF OZONE WATER SANITIZATION:

1. There are higher equipment and operational costs and it may be more difficult to find professional proficient in ozone treatment and system maintenance
2. Ozonation provides no germicidal or disinfection residual to inhibit or prevent regrowth
3. Potential fire hazards and toxicity issues associated with ozone generation.
4. The system may require pre-treatment for hardness reduction or the additional of polyphosphate to prevent the formation of carbonate scale



Pharma Tech

Why Ozone?

- LOWER WATER CONSUMPTION AND DISPOSAL COST
- GREEN CHEMICAL
- POWERFUL REACTANT

LOWER WATER CONSUMPTIONS AND DISPOSAL COST:

REDUCES CHEMICAL SANITIZATION & ENERGY COST

as its an alternative for other sanitization processes and that's what makes it safe with no disposal cost so it doesn't emits any harmful chemicals and decomposes back into O₂ as a by product. Ozone improves uptime potential because what can take up to 8 hours with Steam or chemical can be done in 15-20mins with Ozone as it also reduces overall water consumption due to fewer rinsing steps are required.

All the above adds to reduced operating cost

GREEN CHEMICAL:

Ozone is generated in point of use from air or oxygen that's why it doesn't require storage or transportation cost as well as time.

POWERFUL REACTANT:

Ozone disinfectants more powerfully than other chemical disinfectors and 3000 times stronger than chlorine. Oxidizes and removes biofilm hence fast reaction rate.

+ HOW TO OBTAIN OZONE :

Ozone is naturally occurring molecule consisting of 3 oxygen atoms O₃.

1. Filter air to create pure oxygen O₂
2. Pass pure oxygen gas through a high voltage corona, similar to lightening, causing oxygen molecules to break into individual atoms (O₁).
3. Individual atoms (O₁) bond with oxygen molecules (O₂) to create ozone (O₃).
4. O₃ is injected into low pressure cold water and distributed via PVC or stainless steel piping for sanitization use throughout the facility.

+ BIOFILM IN WATER SYSTEM:

Thin layer of bacteria and organic matter that occurs under the viscous boundary layer, at the interface between the bulk water phase and solid system components, such as piping, filters & resins. about 65% of all microbial infections, and 80% of all chronic infections are associated with biofilms. Bacterial biofilm is less accessible to antibiotics and human immune system and thus poses a big threat to public health because of its involvement in variety of infectious diseases. Biofilms are present everywhere in nature and can be found in industrial places, hotels, waste water channels, bathrooms, labs, hospital settings and commonly occur on hard surfaces submerged in or exposed to an aqueous solution. It can also be formed as floating mats on surface of liquid. Its formation can occur on both living and non-living surfaces.

+ CONTROLLING MICROBIAL GROWTH LEADS TO CONTROLLING TOC:

Ozone reduces TOC. TOC reductions in post treatment consists of two steps and avoidance of system Bio-colonization and Ozone can do both. If the microbial growth reduces to approx. 1 cfu/100mil. then Toc is controlled below 20ppb level As the USP specification for TOC is 500ppb and for bacteria count is 100cfu/ml. Both which are not realistic for trouble free water system. Ozone is essentially the only way to achieve sub ppb TOC levels in high purity water.



PHARMA ACCESS – OVER 18 YEARS OF PRESENTING BRILLIANCY IN PHARACUETICAL INDUSTRY.

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