



PURE WATER (PW), ULTRA-PURE WATER (UPW) & WATER FOR INJECTION (WFI) TREATMENT WITH OZONE TECHNOLOGY

Sterile • Residue-Free • Globally Compliant

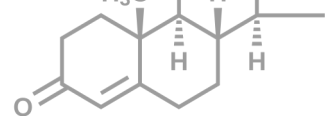
INTRODUCTION

Pharmaceutical, biotech, semiconductor, and healthcare industries require water of the highest purity—whether as Purified Water (PW), Ultra-Pure Water (UPW), or Water for Injection (WFI). The challenge lies in maintaining microbial control and system sterility without compromising water quality.

Traditional sanitization methods such as hot water or chemical disinfectants can be costly, energy-intensive, and residue-forming. Ozone (O₃) provides a clean, reliable, and residue-free solution, ensuring microbial safety while meeting strict global regulations



How It Works?



01 Ozone Generation

Oxygen is converted into ozone using high-purity generators

02 Injection

Ozone is dissolved into purified water storage and distribution loops

03 Disinfection

Ozone destroys bacteria, viruses, fungi, spores, and biofilms

04 Self-Decomposition

Ozone naturally breaks down to oxygen, leaving water ultra-pure

Benefits at a Glance



Continuous Microbial Safety

Protects water loops from contamination



Residue Free

Ozone decomposes into oxygen, leaving no chemical traces



Regulatory Approved

Recognized by USP, EP, JP, and FDA for PW, UPW, and WFI



Biofilm Control

Prevents microbial growth inside tanks and pipelines



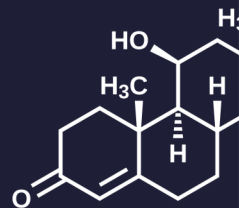
Cost & Energy Savings

Reduces reliance on hot water sanitization



Versatile

Effective in pharmaceutical, biotech, semiconductor, and medical applications



Applications



PW (Purified Water)

For pharma production, lab processes, and utilities



UPW (Ultra-Pure Water)

For microelectronics, semiconductor, and high-precision manufacturing



WFI (Water for Injection)

Sterile water for injectable drugs and biologics



Distribution Loops & Storage Tanks

Continuous sanitization of systems



Technical Notes

01

Residual Ozone

Maintained at 0.1–0.2 ppm for microbial protection.

02

System Integration

Works with cold WFI storage & PW/UPW distribution loops

03

Validation

IQ/OQ/PQ documentation available for pharma facilities.

04

Regulatory Standards

Fully compliant with USP <1231>, EP, JP, and GMP.

Safety First

01

Ozone introduced in closed water loops only

02

Ozone destruct units ensure water delivered to point-of-use is ozone-free

03

Continuous dissolved ozone monitoring guarantees compliance and safety

04

Operator exposure prevented through sealed and automated systems.



Recommended Products for PW, UPW & WFI

(as per requirements we suggest)

01 Oxipure Pharmaline Series

Designed for pharmaceutical-grade water loops

02 Oxipure Membrel

Electrochemical ozone generators ideal for ultrapure and WFI systems

03 Dissolved Ozone Sensors

For continuous monitoring and validation

04 Ozone Mixing Systems

Ensure stable and uniform ozone dissolution

Conclusion

Ozone technology ensures safe, compliant, and residue-free sanitization of PW, UPW, and WFI systems. With Croissance's expertise and advanced ozone solutions, industries can achieve ultra-pure water quality, reduce costs, and maintain regulatory compliance

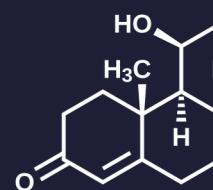




Your Next Step



Experience the future of safe, sustainable sterilisation.



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