

Proven Chemical-Free Destruction for PFAS and Other Persistent Contaminants

For more than 30 years, **Photo-Cat®** has been commercially applied to destroy some of the most difficult contaminants found in groundwater, drinking water, and industrial water systems. Rather than developing separate treatment trains for individual contaminants, **Photo-Cat®** provides a single advanced oxidation platform capable of destroying a broad spectrum of persistent organic compounds.

As PFAS regulations continue to evolve, **Photo-Cat®** has demonstrated that this same proven platform can effectively destroy PFAS while continuing to treat other complex contaminants such as 1,4-dioxane, VOCs, cVOCs, pharmaceuticals, EDCs, taste and odor compounds, and biological contaminants.

For sites facing multiple contaminants, **Photo-Cat®** provides a simplified and future-ready treatment strategy.

Why Destruction Matters

Many PFAS technologies remove contaminants from water by transferring them onto activated carbon, ion exchange resin, or into concentrated liquid waste streams. While effective for removal, these approaches create secondary waste that must still be managed.

Photo-Cat® takes a fundamentally different approach. By Using Purifics' patented TiO₂ slurry-based AOP+ process, contaminants are destroyed directly within the treatment process rather than transferred to another waste stream.

Instead of managing PFAS in another form, **Photo-Cat®** minimizes long-term treatment liabilities through on-site destruction.



Why Photo-Cat® Is Different

Unlike conventional UV/AOP systems, **Photo-Cat®** is a true chemical-free AOP+ platform.

It does not rely on hydrogen peroxide, ozone, or conventional hydroxyl radical chemistry, allowing the system to operate under water conditions that often challenge traditional oxidation technologies.

Photo-Cat® also eliminates many of the operating costs associated with conventional AOP systems, resulting in a simpler, low-maintenance treatment process with significantly reduced lifecycle costs.

AOP	(eV)
PHOTO-CAT (Chemical-Free)	3.18-4.8
UV/O3	2.8
UV/Peroxide	2.8
Ozone	2.07
Cavitation	2.8
E Beam	2.8
Chemical	
• Hydrogen Peroxide	1.77
• Permanganate	1.67
• Chlorine Dioxide	1.50
• Chlorine	1.36
• Fluorine	3.05

Where Photo-Cat® Provides the Greatest Value

Photo-Cat® is particularly well suited for applications where treatment objectives extend beyond PFAS removal alone.

- Groundwater remediation
- Municipal drinking water
- Industrial process water
- Water reuse systems
- Sites containing PFAS and 1,4-dioxane
- Multi-contaminant groundwater plumes
- Future-proof treatment systems anticipating emerging regulations

Proven Performance

Recent PFAS testing has further validated the platform by demonstrating compliance with current PFAS regulatory categories and Hazard Index requirements while simultaneously maintaining its established capability for destruction of contaminants such as 1,4-dioxane.

Refer to document CS-MUN-015

Contaminant	Feed (ng/L)	Filtrate (ng/L)	MCLs
PFOS	16	<1.5	<4 ppt
PFOA	37	1.6	<4 ppt
PFNA	26	<1.5	<10 ppt
PFHxS	7.9	<1.5	
PFPeS	2.7	<1.5	
PFHpA	13	4.1	
PFBS	3.3	3	
PFBA	24	27	
PFPeA	21	21	
PFHxA	25	22	
Total	175.9	84.7	
HI		<0.15	<1
1,4-dioxane (ppb)	18	<0.2	<0.35

	Category 1	Category 2	Category 3	Hazardous Index
MCL	<4 ppt PFOA <4 ppt PFOS	<10 ppt PFNA <10 ppt PFHxS <10 ppt GenX	<2000 ppt PFBS	<1*

