Purifics

PHOTO-CAT AOP+

Chemical-Free Water Purification Since 1993:

Photo-Cat is a chemical free process that destroys organic contaminants using a TiO2 slurry-based photocatalytic process to purify or detoxify water. Photo-Cat removes chemical contaminants (such as 1,4-dioxane), biologicals, viruses, oocysts, EDCs, PPCPs, sub-micron particulate, metal and can reduce bromate back to bromide. Photo-Cat has an established history of regulatory compliance since 1994 as it is the solution to the challenging MOTCO Superfund Site.

Benefits include:

- the strongest oxidation potential of all AOPs
- a unique reductive pathway for recalcitrant compounds
- biological destruction/filtration
- significant advantage in efficiency, cost and complexity reduction

Photo-Cat lifecycle costs are significantly less than conventional technologies such as activated carbon, UV ozone, UV peroxide, chemical oxidation, air stripping with off-gas treatment, and reverse osmosis. Photo-Cat is the economical choice for multi-year projects with complex water challenges.

This fully automated process can purify water to very high standards that exceed drinking water standards. Photo-Cat is essentially a solid state, automated device that operates unattended, with service intervals exceeding 20,000 hours.

Differentiation Between AOP & AOP+

Do not confuse the Photo-Cat process with other AOP processes.

Conventional	(eV)
UV / O3	2.8
UV / Peroxide	2.8
Ozone	2.07
Cavitation	2.8
E Beam	2.8
Chemical • Hydrogen Peroxide • Permanganate • Chlorine Dioxide • Chlorine • Flourine	 1.77 1.67 1.50 1.36 3.05
Etc.	

AOP+	(eV)
Photo-Cat	3.18 – 4.8

- Multiple Destruction Pathways
- Oxidation & Reduction
- Not Hydroxyl Radical Dependent
- Strongest Oxidation Potential
- Multi-Barrier
- Chemical Free
- CapEx & OpEx → Cost Reduction
- Purifies Contaminants Others **CANNOT**

Photo-Cat has the strongest oxidizing potential of any commercially available AOP process and will destroy contaminants of concern that other AOPs can not.

340 Sovereign Road, London, Ontario, N6M 1A8 519-473-5788 | info@purifics.com | www.purifics.com

Applications:

Municipal, Industrial, Oil & Gas, Marine, Food & Beverage

Drinking Water	Industrial Process Wastewater	RO Feed & Polish
Groundwater Remediation	High Purity Water	Reuse / Recharge
Disinfection & Sterilization	Bilge & Ballast Water	Zero Discharge / Closed Loop

Simple & Efficient:

- No catalyst loss - continuously recovers all catalyst, 24/7 duty, Catalytic process reduces energy requirements, Quiet
- No wipers, No membrane cleaning, No off gas, No waste generated, No UVT dependence, No chemical oxidants like peroxide or ozone. No Carbon Requirement.

Automated:

- Audited not Operated, SCADA/PLC programmed operation
- Digital service manual online; Remote monitoring, control, and data logging
- Automatic fault detection and recovery, 0 to 100% turn down capability

Ability to Treat:

- Insensitive to dissolved solids and opaque fluids, Not inhibited by turbidity, UVT or pH levels
- Not affected by pressure, temperature, alkalinity
- Operates with water containing iron and other metals

Manufacturing Excellence:

- Corrosion resistant, High-grade stainless-steel construction, NEMA 4 rating
- Plug & Play installations
- Highly reliable using highly developed standard, off the shelf components

Photo-Cat Models:

Photo-Cat L
1kw-20L Batch

Photo-Cat DL

DOC3006R11
Printed in Canada

Photo-Cat DDL

Photo-Cat QDL
Up to 360 kW-4 MGD

Sizing:

Is the product of Flow X Rate Constant (Energy/Volume).

The Next Step Is to Pilot:

DOC3006R11
Printed in Canada

340 Sovereign Road, London, Ontario, N6M 1A8 519-473-5788 | info@purifics.com | www.purifics.com

Why Photo-Cat AOP+: Features & Benefits

- ✓ Better Water at Lower Cost
- ✓ The Platform is the Plant
- ✓ Removes & Destroys Chemicals
- ✓ Removes Color, Taste & Odor
- ✓ Removes Pb, Hg, Cr6
- ✓ Disinfects & Sterilizes
- ✓ Reduced Complexity
- ✓ Broad Temperature & Pressure Range
- ✓ Longer Service Interval
- ✓ Lower Cost Structure
- ✓ >99% Online Duty
- ✓ NSF ANSI 61
- ✓ Reduced Complexity
- ✓ > 25 Year Design & Membrane Life
- ✓ 0 to 100% Turndown Capability
- ✓ Generic Off the Self Parts
- ✓ Promotes Sustainability
- ✓ No Annual Lamp Replacement
- ✓ No Wiper or Quartz Replacement
- ✓ No Hydrogen Peroxide or Stabilizer Residuals
- ✓ No Bromate Production
- ✓ No Chemical Oxidant Storage
- ✓ No UVT Dependence
- ✓ No Pre-Treatment Requirements
- ✓ No THM or HAA Issues
- ✓ No Generated Waste
- ✓ No Noise
- ✓ No Off Gas

DOC3006R11
Printed in Canada

340 Sovereign Road, London, Ontario, N6M 1A8 519-473-5788 | info@purifics.com | www.purifics.com