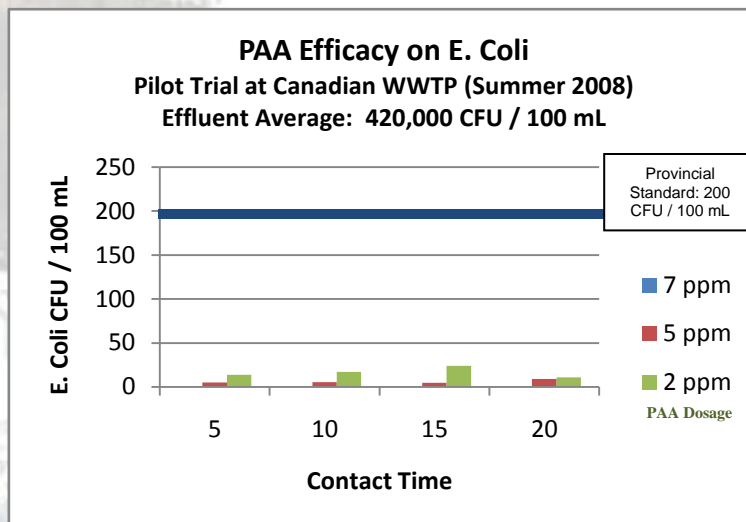


VigorOx[®] WWT Peracetic Acid

FMC's VigorOx[®] WWT is a highly effective biocide demonstrating superior microbial reductions of fecal coliforms compared to gaseous chlorine or bleach at lower use rates and shorter contact times.

VigorOx[®] WWT is a 15% peracetic acid (PAA) formulation which is USEPA approved for the disinfection of wastewater effluent streams. VigorOx[®] WWT produces no chlorinated by-products (THMs), decomposing into environmentally benign compounds: water, oxygen, and acetic acid (vinegar).



PAA Efficacy on E. Coli. Note: 7 ppm PAA dosage values < 1 CFU / 100 mL for all contact times.

Applications

- Primary, secondary, or tertiary effluent treatment
- CSO / Storm water
- Re-use streams
- Enhancement of UV systems

Benefits

- Contact time reduced
- Broad spectrum biocide
- Can meet compliance even when plant capacity is exceeded
- Produces none of the harmful by-products associated with chlorine (THMs)
- 12 months product stability
- No need to de-chlorinate prior to discharge
- Low capital storage and handling systems
- Effective over a wide pH range
- Effective in turbid waters

Enhancement of UV Systems*

- Reduction in power intensity for UV Lights
- Lower lamp operating temperature
- Less frequent and easier lamp cleaning

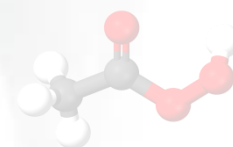
→ Annual operating cost savings

* based on pilot trial data demonstrating a 47% reduction in UV light power intensity. Significant cost savings were observed when processing 21 MGD of water using a VigorOx[®] WWT supplemental treatment at a concentration of 2 ppm PAA for 8 hrs / day, 3 days / wk.

www.microbialcontrol.fmc.com

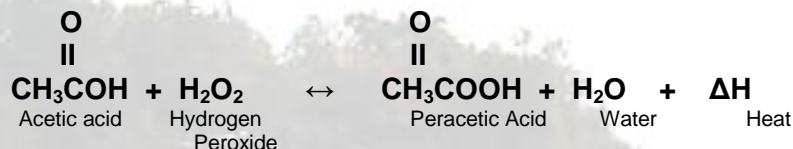
FMC Corporation Peroxygens Division 1735 Market Street Philadelphia, PA 19103 1-866-860-4760

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General Chemistry

- Peracetic acid (PAA) exists in an equilibrium reaction between hydrogen peroxide, acetic acid and water



Additional Trial Performance Results

- Pilot trial at Saltillo, MS (Fall 2007)**
 - Performed by Mississippi State University under a US EPA grant
 - Comparison of VigorOx[®] WWT to chlorine
 - PAA dosed at 2 and 4 mg / L
 - Cl⁻ dosed at 6 mg / L
 - Results
 - PAA demonstrated no detectable contribution to COD
 - No difference in pH, TSS and DO between PAA and chlorine
 - Equivalent performance between PAA and chlorine on E. coli**
- Great Lakes Basin (Summer 2007)**
 - Performed by third party entity
 - Slip Stream test
 - 8:1 turn down
 - Comparison of VigorOx[®] WWT to chlorine
 - PAA dosed at 2 ppm
 - Cl⁻ dosed at ~25+ ppm; consumed ~16 ppm
 - Results
 - Equivalent performance between PAA and chlorine on E. coli (100% kill)**

Effluent Treatment

- FMC is available to visit your facility and complete a full survey and make recommendations as every application has unique issues.
- Add VigorOx[®] WWT to effluent water at a minimum concentration of 0.5 ppm.
- The application rates for individual facilities will depend on the degree of bioloading in the effluent stream to be discharged and discharge limits.
- Adjust application rates to meet the need of the individual facility.
- The maximum amount of peracetic acid that can be discharged from a U.S. facility is 1 ppm.

FMC Customer Support

FMC can help you establish the most appropriate treatment application for your site and assist in the design of a safe storage and handling system for your facility. FMC's technical staff stands ready to help you with expertise that spans a variety of fields including chemistry, engineering, microbiology, and regulatory affairs. FMC has portable dosing and metering systems that can be utilized to support plant trials. For more information please contact us at 1-866-860-4760 or visit us at www.microbialcontrol.fmc.com