ELTRON WATER SYSTEMS

Every Drop Counts

Eltron Water Systems

Tech Brief

PeroxEgen™ On-Site H_2O_2/PAA Water Treatment System

A robust and innovative electrolytic H_2O_2 generation technology, PeroxEgen™

- Provides an on-site hydrogen peroxide source for water treatment and cleanser generation
- Is a turn-key, modular system that scales to meet application requirements
- Generates PAA
- Enables combining H_2O_2 with a UV or ozone system for advanced oxidation treatment capabilities

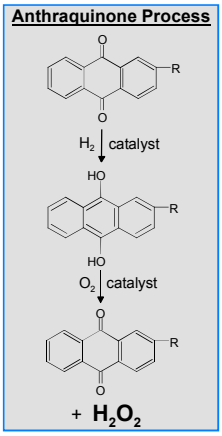
Problem Addressed

Chlorine gas is being replaced as the primary oxidizing biocide and oxidant in many industries. The hazards of handling and storing chlorine gas and concerns about the harmful effects of chlorinated organic byproducts to people and the environment is compelling the shift to a safer, more environmentally friendly alternative.

Hydrogen peroxide (H_2O_2) is a well-known oxidizing biocide and oxidant that is effective in many water treatment applications and is environmentally benign; only water and oxygen are byproducts. Using H_2O_2 in advanced oxidation processes that combine ultraviolet (UV), ozone or transition metal activation of H_2O_2 to form the very powerful, but short-lived hydroxyl radical are increasingly used in many water treatment applications.

Combining hydrogen peroxide with a readily available, safe feedstock forms the very effective biocide and sanitizing mixture of peracetic acid (PAA) and H_2O_2. Foods and surfaces treated with this mixture are effectively disinfected without producing or leaving any harmful residuals.

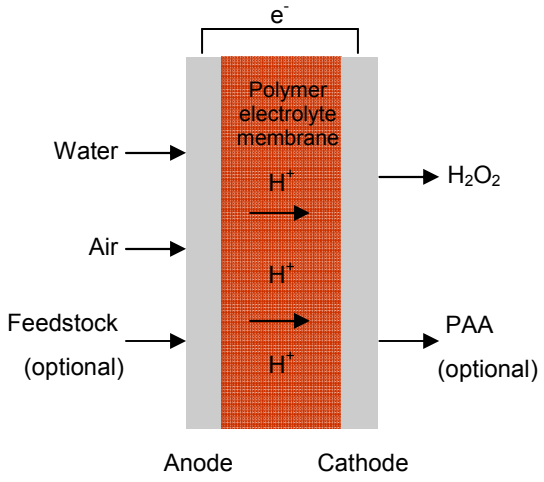
Current Approach



Most of the hydrogen peroxide produced today is made via the anthraquinone process (a two-step catalytic chemical process) at large-scale, centralized plants. H_2O_2 is then shipped to customers in concentrations ranging from 35-70%. Residual organics resulting from this manufacturing process are always present in anthraquinone produced H_2O_2. Also, phosphanate-based stabilizers are normally added to keep the H_2O_2 stable.

Eltron's Strategy

Eltron has developed PeroxEgen™, a turn-key, mobile electrolytic technology that generates H_2O_2 — and optionally PAA — on-site for a variety of water treatment, advanced oxidation and cleansing applications. PeroxEgen requires only water, air, electricity and (optionally, a readily available generally regarded as safe feedstock) as consumables for water treatment and allows pH to be controlled for a variety of applications. PeroxEgen can be operated in flow-through mode for direct treatment at low H_2O_2 /PAA concentrations. Unlike bulk catalytic production methods, Eltron's electrolytic process is virtually insensitive to temperature and can operate over a wide temperature range.



Eltron's PeroxEgen technology provides a different method for H_2O_2/PAA delivery at the point of use, eliminating distribution costs and the hazards associated with handling and storage. Water treatment costs, H_2O_2 and PAA concentrations and production rates are dictated by the particular application and process conditions.

Advantages of Eltron Waters' PeroxEgen H_2O_2 water treatment system:

- Generates cleansers that are effective without surfactants, eliminates chlorinated byproducts and reduces BOD
- On-site source of hydrogen peroxide/peracetic acid eliminates transport, handling, storage, regulatory compliance issues
- Mobile, turn-key operation
- Modular; scales for a variety of applications
- Consumables and system utilities are water, air, electricity
- Operating temperature up to 60°C
- Direct treatment of water in flow-through or batch modes
- No harmful chemical residuals
- Wide variety of water treatment, cleanser generation and remediation applications is further expanded with a combined advanced oxidation process

Contact us

To learn more about PeroxEgen and innovative water treatment systems from Eltron Water, visit www.eltronwater.com or contact: **Peter Hagan, VP Sales & Marketing: phagan@eltronwater.com; 303-530-0263.**

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Eltron Water Systems LLC
Eltron Water invents, develops and commercializes innovative, cost-effective water treatment and disinfection systems.

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