

Additional Technical Resources and Contacts, Acknowledgments and Disclaimers

AMWA Webcast “Gaseous Chlorine and Its Alternatives” June 19, 2007. Special thanks to those listed below who provided background references and information in preparation for the webcast. The following general acknowledgements and disclaimers apply.

Webcast Acknowledgements and Disclaimers: Information from a variety of sources has been referenced and built upon for this webcast and background materials. Mention of specific utilities is not meant to represent any one entity as the sole, or predominant, expert in any particular topic area or technology. Opinions expressed are those of the speakers. Mention, or omission, of vendors/manufacturers or trade names in this webcast or backup materials does not constitute endorsement, or non-endorsement, of any process or product. All those considering new technologies, or working to optimize existing applications, can benefit from consulting a variety of sources and references.

Thanks to all who have provided insights and reference materials or referrals for this webcast.

Webcast Background General

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The following is a listing of contact information for technical persons or agencies that have provided information and/or references or referrals for the webcast content and background, in addition to our utility speakers.

Chlorine background and technical references

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Chlorine Gas Decision Tool

The *Chlorine Gas Decision Tool* was developed by the National Association of Clean Water Agencies (NACWA) for the Department of Homeland Security.

It is an Excel-based means of evaluating costs and benefits related to alternatives to chlorine gas disinfection, given the particulars of each utility. It is available to utility managers at WaterISAC.org or NACWA.org.

While DHS understands that there may be no way to completely eliminate the use of chlorine gas in the water and wastewater industry, the Department is interested in encouraging utilities currently using gaseous chlorine for disinfection to consider alternatives. The *Tool* allows water and wastewater utilities to conduct a screening-level assessment of the commonly available disinfection alternatives and help them determine whether to proceed with a more comprehensive engineering analysis specific to their plants.

The *Tool*, which is basically a series of Excel spreadsheets and formulas, allows users to identify the characteristics of a disinfection option that are most important to their agencies (e.g., process reliability, safety to the public) and then rate the different disinfection alternatives for each of these characteristics. With some basic chemical use information and cost figures, the tool provides a cost-benefit analysis for the alternatives based on the agency-specific information provided, allowing the user to see what alternative(s) are most feasible.

The *Tool* is not designed to enable utilities to make the final decision of whether to invest in an alternative disinfection approach, but will provide them with enough information to decide whether a more formal engineering analysis is warranted. The *Tool* includes a Report Template, which, with the addition of some utility-specific information, provides the user with a ready-made report to detail the results of the analysis.

It is available to WaterISAC subscribers at <http://www.waterisac.org> or utility managers may request a CD on NACWA's website (<http://www.nacwa.org/clcd.cfm>).

Chlorine Gas and Bulk Hypochlorite General References

Chlorine Institute, Inc.

Chlorine production, transportation, uses/applications, compatibility, feed, safety
<http://www.chlorineinstitute.org/>

Arthur E. Dungan
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The Chlorine Institute, Inc.
1300 Wilson Boulevard
Arlington, VA 22209
(202)741-5760
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Frank Reiner (Chlorine transportation-related information)
freiner@CL2.com

American Chemistry Council—Chlorine Chemistry Division

General information on chlorine chemistry, production, safety and uses
<http://www.americanchemistry/chlorine>

National Sanitation Foundation (NSF)

Chemicals approved for drinking water applications with links to manufacturers.
<http://www.nsf.org/Certified/PwsChemicals/>

Components approved for drinking water applications with links to manufacturers
<http://www.nsf.org/Certified/PwsComponents/>

Vendors/Manufacturers of On-site Chlorine Generation Equipment

*(listed alphabetically)**

Electrolytic Technologies (Klorigen) - Onsite electrolytic generation of chlorine gas, sodium hydroxide and 12% hypochlorite solutions

Derek Lubie
President
Electrolytic Technologies Corporation
19597 NE 10th Av
North Miami Beach
Florida 33179
Tel. (305) 655-2755
Fax. (305) 655-2669
dbl@electrolytictech.com
www.electrolytictech.com

MIOX - Onsite electrolytic generation of 0.8% sodium hypochlorite solution*

Onsite electrolytic generation of mixed oxidants
Katie Boleck
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5601 Balloon Fiesta Parkway
Albuquerque, NM 87113
(800)646-9426
(505)343-0090
Email: Katie@miox.com
Website: www.miox.com
Dr. Gilbert Gordon—mixed oxidant research (EPA, DHS)
(513)529-3336
Email: gordong@muohio.edu

Siemens (OSEC) former W& T- Onsite electrolytic generation of 0.8% sodium hypochlorite solution*

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Severn Trent (Chlortec) - Onsite electrolytic generation of 0.8% sodium hypochlorite solution*

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215-646-9201
866-646-9201

*additional vendors not listed here also make equipment to produce low concentration sodium hypochlorite.