

Tuesday, March 24, 2026						
Start	Finish	Duration	Room / Presentation Topic & Presenters			
		Moderator:	Daniel Stein	Robyn Brooks	Jack Pendlebury	Paige Leland
			Legends II	Legends III	Legends VI	Legends VII
2:00 PM	2:30 PM	30	Enjoy other presentations at this time.	Analytical Integrity from Salt to Hypochlorite	Design Parameters for Falling Film HCl Absorbers	Technical Strategies to Prevent Membrane Cell Damage During Operation
<i>Presented By:</i>			David Miyamoto - Kuehne Chemical Company, Inc. ; Gabrielle Daniel - Kuehne Company	Robert Grooms - CG Thermal	Michael Pope - Asahi Kasei America	
2:35 PM	3:05 PM	30	Chlorine and the Formations of Disinfection By-products	Assessment of Potential Reactivity of Refrigerant R-513a with Chlorine	Part 1, Polymer 101: A Closer look at Polyolefin and Vinyl Materials in Pipes and Valves	Hydrogen and Chlorine Management
<i>Presented By:</i>			Corey Harper - Hawkins, Inc.	Ibrahim Abdallah - OxyChem ; Kenneth Kurko - Fauske & Associates, LLC	Josh Goldberg - Asahi/America	Joe Mock - INEOS Electrochemical Solutions ; Adeline Christmas
3:05 PM	3:20 PM	15	Break			
3:20 PM	3:50 PM	30	Understanding the Process of Breakpoint Chlorination	A Catalytic Route to Low-Cost, Low Carbon Chlorine from CO ₂ and Salts	A Discussion of FRP Piping Condition Assessment	End-of-life Chlor-Alkali Membrane Recycling
<i>Presented By:</i>			Corey Harper - Hawkins, Inc.	Roxanna Delima - Rushnu	Jeff Eisenman - Maverick Applied Science, Inc.	Stephen Grot - Ion Power, Inc
3:55 PM	4:25 PM	30	Hazard Assessment and Mitigation Strategies for Chlorinated Pool Chemicals	Development of Tank Car Closure Procedure	Accidental Mixing Hazard Recognition and Prevention	Incorporation of New Fusion Technology into Fabrication of Highly Corrosive Piping Systems for CPVC/FRP Systems
<i>Presented By:</i>			Karllee Barton - Solenis, LLC in conjunction with the Pool and Hot Tub Alliance	Tim Rice - VSP Technologies	Phil Burmeister - Olin Corporation	Bryan Hutton - Maverick Applied Science, Inc.

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2:00 PM	2:30 PM	Enjoy other presentations at this time.			Legends II
2:35 PM	3:05 PM	Chlorine and the Formations of Disinfection By-products	Corey Harper - Hawkins, Inc.	Chlorine is a powerful oxidant used to disinfect drinking water by attacking carbon-bonded organic compounds and microbial cell structures. During this oxidation process, chlorine reacts with naturally occurring organic matter, altering its molecular bonds and forming halogenated by-products such as trihalomethanes (THMs) and Haloacetic acids (HAAs). These reactions, while essential for disinfection, led to critical EPA regulations to balance microbial protection with chemical optimization. This presentation will summarize the oxidation mechanisms, key water quality factors influencing DBP formation, and approaches to minimize by-product generation while maintaining effective disinfection.	Legends II
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Start Time	End Time	Presentation	Presenter(s) and Company	Abstract	
3:20 PM	3:50 PM	Understanding the Process of Breakpoint Chlorination	Corey Harper - Hawkins, Inc.	Breakpoint chlorination is a fundamental process in achieving effective oxidation and disinfection in potable water treatment. This presentation will examine the essential chemical reactions and operational parameters that define true breakpoint conditions when applying free chlorine. Key discussion points will include the relationship between chlorine dose and demand, oxidation of reduced inorganic and organic compounds, and the point at which a stable free chlorine residual is established. Attendees will gain a clear understanding of how pH, contact time, and water quality characteristics influence the efficiency of chlorine utilization. Practical emphasis will be placed on dose optimization, field monitoring, and ensuring regulatory compliance while maintaining disinfection efficacy and minimizing byproduct formation.	Legends II
3:55 PM	4:25 PM	Hazard Assessment and Mitigation Strategies for Chlorinated Pool Chemicals	Karlee Barton - Solenis, LLC in conjunction with the Pool and Hot Tub Alliance	Chlorinated pool chemicals, including calcium hypochlorite, sodium hypochlorite, and chlorinated isocyanurates, are vital for sanitizing recreational water, safeguarding over a billion swimmers annually by preventing disease in pools and aquatic facilities. This presentation analyzes a decade of incidents involving fire hazards, chlorine gas releases, and chemical incompatibilities throughout an ever-changing supply chain. Critical mitigation strategies for protecting people, facilities, and the environment will be discussed.	Legends II

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Legends III					
2:00 PM	2:30 PM	Analytical Integrity from Salt to Hypochlorite	David Miyamoto - Kuehne Chemical Company, Inc. ; Gabrielle Daniel - Kuehne Company	The chlor-alkali industry has been a cornerstone of chemical manufacturing for over a century, providing the fundamental building blocks for countless products essential to our modern world. While the process itself is well-established, its success hinges on extreme efficiency to remain competitive, requiring a deep commitment to using data. This presentation will take you on a journey, exploring the entire lifecycle of the chlor-alkali process—from the sourcing of salt to the final products. We delve into the analytical methods that provide the necessary data, ensuring the process operates in the most economical, efficient, and quality-driven manner possible.	Legends III
2:35 PM	3:05 PM	Assessment of Potential Reactivity of Refrigerant R-513a with Chlorine	Ibrahim Abdallah - OxyChem ; Kenneth Kurko - Fauske & Associates, LLC	The American Innovation and Manufacturing (AIM) Act mandates a phasedown of high global warming potential (GWP) hydrofluorocarbons (HFCs), driving the transition to lower-GWP alternatives. Refrigerant R-513A is a fourth-generation refrigerant. However, as the chlorine processing industry moves away from accepted and widely used refrigerants, potential hazards associated with chemical reactivity, particularly interactions with chlorine must not be overlooked. This presentation highlights critical safety considerations as a sequel to a Dow Chemical Industry Chlorine Institute presentation three decades ago, when our industry was shifting away from Chlorofluorocarbons (CFC's) to R-22 and R-134a. We carried out similar experiments with chlorine and R-134a.	Legends III
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3:20 PM	3:50 PM	A Catalytic Route to Low-Cost, Low-Carbon Chlorine from CO ₂ and Salts	Roxanna Delima - Rushnu	Rushnu's CarbonCatalyze™ technology uses carbon dioxide as a feedstock, combining it with salts to produce carbonate minerals and chlorine-based chemicals. The process operates in two catalytic steps: (1) capture and mineralization, where CO ₂ reacts with salts via Catalyst 1 to form stable carbonates, and (2) catalyst regeneration, where Catalyst 1 is regenerated by Catalyst 2, releasing Cl ₂ or sodium hypochlorite. This approach achieves high CO ₂ utilization efficiency and provides a carbon-negative pathway for chlorine production, with demonstrated reductions of >50% in cost, ~75% in electricity use, and ~96% in emissions compared to electrolysis.	Legends III
3:55 PM	4:25 PM	Development of Tank Car Closure Procedure	Tim Rice - VSP Technologies	With the upcoming requirements surrounding tank car closure, it's important to ensure that loading/unloading facilities develop effective procedures to ensure a cars remain leak-free while in transit. This presentation will cover best practices for tank car flange assembly on various connection types. In addition, this will cover guidelines for taking an engineered approved to fluid sealing and the development of effective closure instructions & procedures.	Legends III
Legends VI					
2:00 PM	2:30 PM	Design Parameters for Falling Film HCl Absorbers	Robert Grooms - CG Thermal	The recovery of HCl from process gas streams usually requires producing at least a 31.5% HCl solution. This is most commonly accomplished with the use of a water-cooled graphite falling film absorber and a packed tail tower. This presentation will discuss the design and operational considerations to properly distribute liquid and gas to each tube for optimum operation, minimum wetting rates, tube sheet layouts for even liquid distribution, and gas mass transfer coefficients based on gas composition and operating pressure.	Legends VI

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2:35 PM	3:05 PM	Part 1, Polymer 101: A Closer look at Polyolefin and Vinyl Materials in Pipes and Valves	Josh Goldberg - Asahi/America	The Polymer 101 Series is an introduction to the world of non-metallic thermoplastic materials in pipes and valves. We will explore the differences between thermoplastics like PVC/CPVC, HDPE, and PP as well as take a look at practical, real-world applications where these materials excel. This presentation is meant to give a better understanding of non-metallic materials and their appropriate applications.	Legends VI
3:05 PM	3:20 PM	Break	Break	Break	Legends VI
3:20 PM	3:50 PM	A Discussion of FRP Piping Condition Assessment	Jeff Eisenman - Maverick Applied Science, Inc.	FRP, "Fiberglass Reinforced Plastic", piping is essential for many chlor-alkali services with some services being straight FRP while others may be dual laminate. The nature of FRP laminate construction and bonding is unique and more complex than other piping materials of construction. For this reason, condition assessment of these systems can be difficult and complicated. A thorough understanding of fabrication methods, construction, and material behavior are important to make reliable condition assessments for FRP and dual laminate piping. This presentation will discuss sites assessments, insight on pipe support arrangement, and inspections methods necessary to provide condition assessments of FRP piping. The key is to collect and assemble multiple data points from different inspection methods and techniques to develop accurate condition assessments so that operators and unit managers can make informed decisions on system reliability and maintenance.	Legends VI
3:55 PM	4:25 PM	Accidental Mixing Hazard Recognition and Prevention	Phil Burmeister - Olin Corporation	This presentation will review common components leading to accidental mixing events during chemical delivery and handling and will also address effective prevention strategies.	Legends VI

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Legends VII					
2:00 PM	2:30 PM	Technical Strategies to Prevent Membrane Cell Damage During Operation	Michael Pope - Asahi Kasei America	As the only global supplier of both electrolyzers and ion exchange membranes, Asahi Kasei offers a unique perspective on operational challenges faced by Chlor-Alkali plants. This presentation focuses on strategies to mitigate blackout related risks, including salt blistering, membrane protonation, and cathode corrosion. We will also examine how current density influences membrane life and explore additional methods to prevent membrane damage. By combining insights from both technologies, we aim to support more stable, long-term membrane performance while helping reduce operational costs and ensuring high performance.	Legends VII
2:35 PM	3:05 PM	Hydrogen and Chlorine Management	Joe Mock - INEOS Electrochemical Solutions ; Adeline Christmas	Hydrogen is an ever-present risk in chlor-alkali operations and understanding how it behaves inside the electrolyzer is essential for safe and reliable operation. This presentation will delve into hydrogen formation, how it transfers across the membrane, and why this critically matters. We will compare hydrogen levels in chlorine from sodium and potassium electrolysis, examine what happens during start-up versus steady state operation, and highlight how good design of process controls – automation, interlocks, and VMS – can make all the difference. We will also discuss the importance of reliable analysis, such as gas chromatography, in keeping operations safe. Finally, a look back at past hydrogen-related incidents will provide valuable lessons and reinforce why careful control and monitoring remain critical for every chlor-alkali facility.	Legends VII
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3:20 PM	3:50 PM	End-of-life Chlor-Alkali Membrane Recycling	Stephen Grot - Ion Power, Inc	In this presentation we will demonstrate the significant value contained in end-of-life Chlor-Alkali membranes. In contrast to the recycling challenges of many low value hydrocarbon "plastics" ; fluoropolymers have high value, and excellent stability thus are good candidates for recovery and second use applications. In this presentation we will describe the process that we developed to recover the ionomer component of these used membranes and convert them to commercial products. This work was supported under Department of Energy SBIR Phase II Award number DE-SC0023826.	Legends VII
3:55 PM	4:25 PM	Incorporation of New Fusion Technology into Fabrication of Highly Corrosive Piping Systems for CPVC/FRP Systems	Bryan Hutton - Maverick Applied Science, Inc.	The Chlor-Alkali industry has long sought durable materials of construction to extend the life cycle of anolyte and catholyte systems. Recent advancements combine advanced vinyl-based CPVC piping technology with high-precision CNC fusion methods, resulting in weld joints of superior strength and reliability. These components have demonstrated exceptional performance in 90 °C environments, effectively addressing the permeation limitations observed in polyolefin. This presentation will examine the fusion process in detail, highlighting how precision engineering and skilled craftsmanship can deliver long-term system integrity and operational efficiency.	Legends VII