Key Issues Confronting the North American Chlor-Alkali Industry

ABICLOR XVII Seminar on Safe Transportation

November 2014

Frank Reiner

THE CHLORINE INSTITUTE

On Course

CI's Mission –

Continuous improvement of performance during production, distribution, and use of chlorine, caustic, bleach and hydrochloric acid to include:

- Safety
- Security
- Environment

The Chlorine Institute

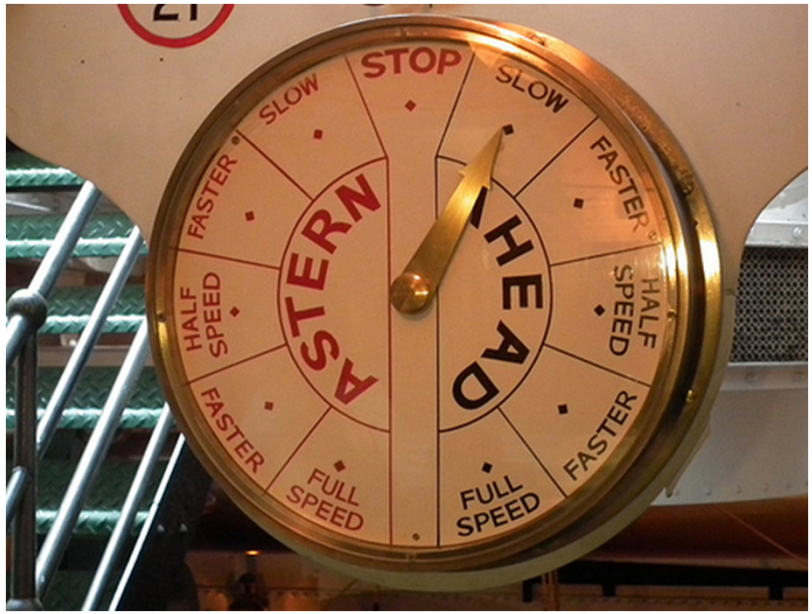
Steady As She Goes

- Industry condition
- Engagement & regulatory advocacy
- Safety stewardship

The Chlorine Institute

North American Industry Outlook

- Low energy cost results in production advantage
- Demand steady
- New production capacity coming on line
- Significant consolidation (PPG/Georgia Gulf) and carve out (Dow) changing face of the industry



The Chlorine Institute

CI's Focus

Issue	Long Term Goals
Health & Safety	Zero releases, injuries, and process safety incidents
Transportation	Maintain ability to transport mission chemicals; eliminate accidents
Customer Stewardship	Zero releases, injuries, and process safety incidents
Emergency Preparedness	Minimize impact of a release; maintain CHLOREP
Environment & Security	Maintain ability to responsibly use sustainable chlor-alkali technologies

The Chlorine Institute

Process Safety

Regulatory Activity

- OSHA collecting information on specific rulemaking and policy options
- OSHA is considering regulatory changes in 17 areas.

The Chlorine Institute

Process Safety

Proposed changes include:

- Additional management system elements
- Requires evaluation of updates to applicable recognized and generally accepted practices, i.e. CI Pamphlets
- Facilities to coordinate emergency planning with local emergency response authorities
- Third-party compliance audits
- Mechanical integrity of safety-critical equipment

The Chlorine Institute

Chemical Facility Security Regulation (U.S.)

Chemical Facility Anti-Terrorism Standard (CFATS)

- Requires security vulnerability assessment and development of site security plans
- More plans being authorized
- Compliance audits beginning
- Department of Homeland Security (DHS) accepting simpler Alternate Security Plans
- Personnel Surety Program – concern of duplication

Chemical Facility Security Regulation (U.S.)

The CFATS statistics -

- 3,882 facilities are currently covered by CFATS
- There have been 1,550 visits to assist facilities with compliance
- There have been 2,039 Security Plans authorized
- There have been 1,455 Authorization Inspections conducted
- There have been 1,060 Security Plans approved following an on-site inspection

The Chlorine Institute

Chemical Facility Security Regulation (U.S.)

Executive Order 13650 Chemical Safety and Security

- Directs OSHA, EPA, DHS and others to:
  - Update policies, regulations, and standards to enhance safety and security in chemical facilities;
  - Work with stakeholders to identify best practices in the production and storage of potentially harmful chemicals;
  - Improve coordination with local other regulatory agencies
  - Enhance federal agency coordination and information sharing.
- Hence recent OSHA and EPA regulatory activity

The Chlorine Institute

Chemical Sector Coordinating Council

- Chemical Sector Coordinating Council (CSCC) represents the chemical sector in discussions with DHS on matters of threat, security, risk analysis and other related matters
- The CI is a member of the CSCC
- The mission of the CSCC is to advance the physical and cyber security and emergency preparedness of the chemical sector

The Chlorine Institute

Defending The Right to Ship by Rail

- Positive Train Control implementation process
- Railcar design uncertainty
- Lack of competition
- Attempts to limit common carrier obligation
- Attempts to shift liability
- Recent petroleum & ethanol accidents

The Chlorine Institute

Chlorine Railcar Design Status

- Traditional chlorine tank
  - 500 lb. design (≈.75 in)
- New cars since 2009, 600 lb. about 20%

- "Next Generation" design – about 10 cars built to this design which has a thick outer shell and a thinner inner shell or commodity tank
- Additional research ongoing with focus on improved accident survivability
- No firm indication when a long-term design and railcar regulations will be finalized

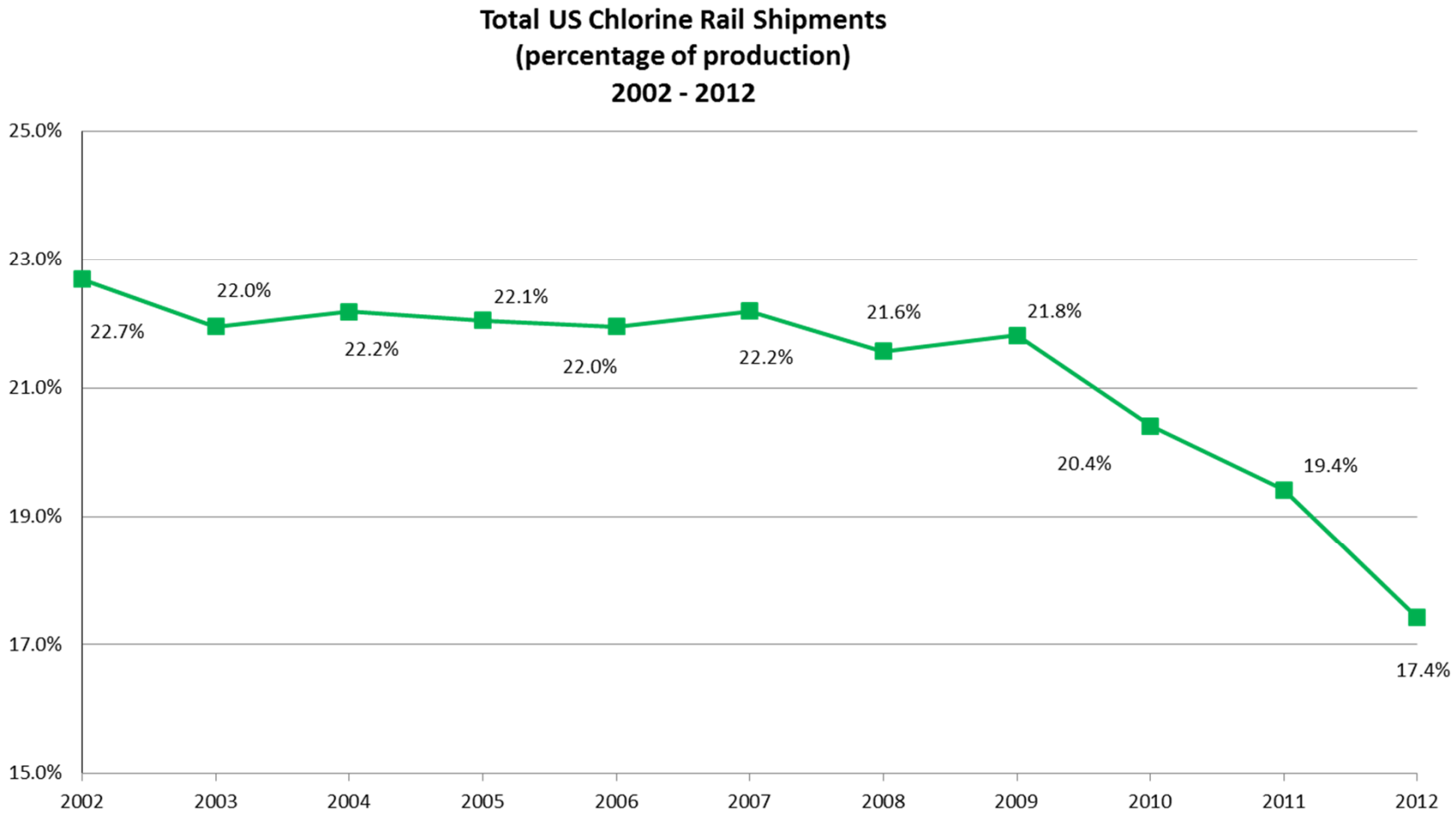
The Chlorine Institute

Positive Train Control (PTC)

- Mandated by Rail Safety and Improvement Act of 2008 for all passenger and toxic by inhalation (TIH) rail mainlines by Dec 31, 2015
- PTC is automatic control to override human errors, e.g., over speed limit, miss-positioned switches, and train-to-train collisions.

The Chlorine Institute

Total Chlorine Rail Shipments



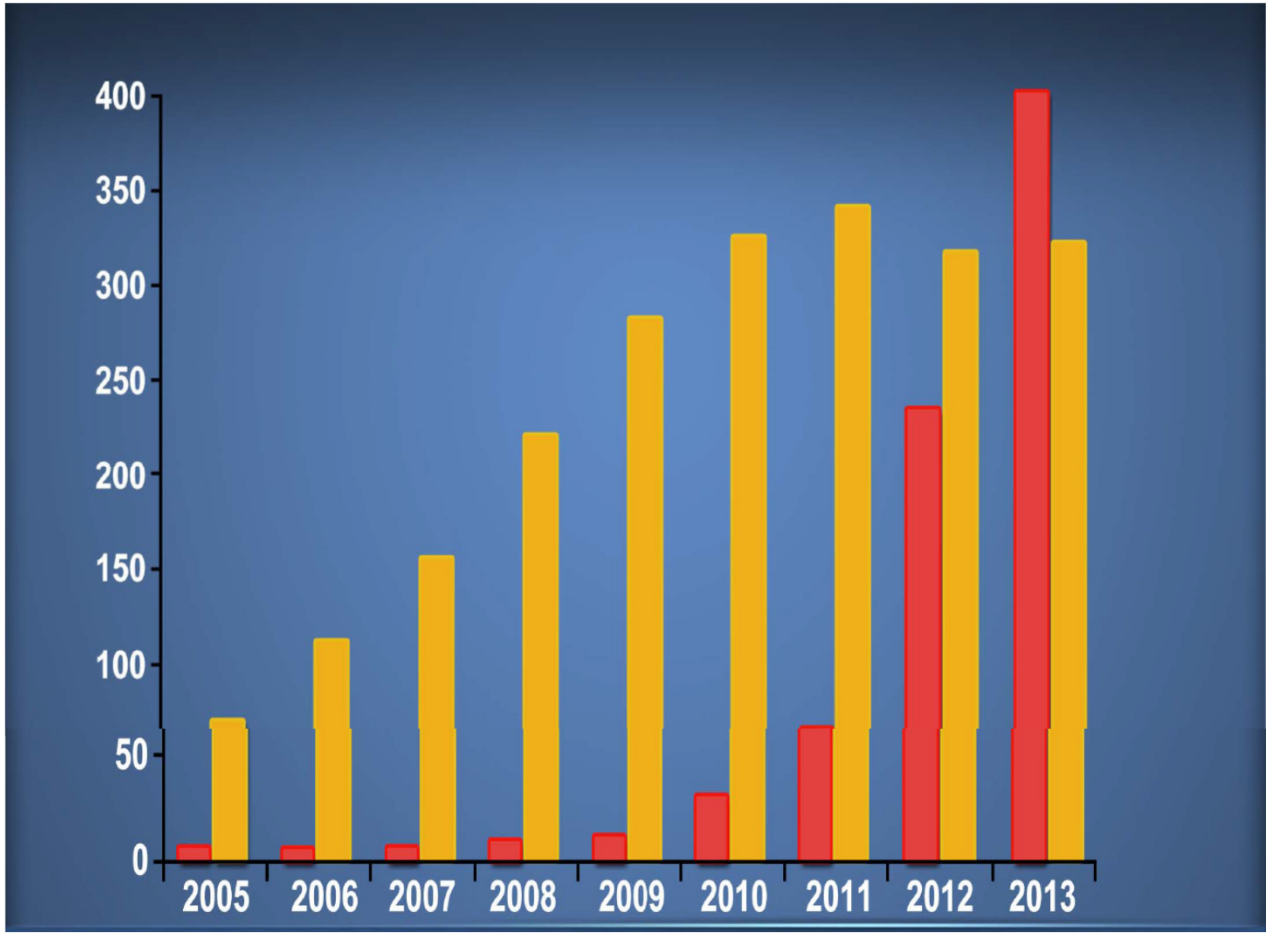
The Chlorine Institute

Reduced Shipments

- Reduction largely result of railroad pressure
- Mostly due to pipelines and colocations
- Tank trucks have not been considered as a reasonable or publically acceptable alternative

The Chlorine Institute

Crude Oil and Ethanol Rail Carloads



The Chlorine Institute

General Service Cars

- Crude oil rail accidents in Canada and U.S. have commanded focus and action
- Various operational directives to railroads and scrutiny of car design
- Rulemaking to require more accident survivability, expected soon
- Has drawn attention away from TIH rail shipments
- Potential impact on caustic and HCl railcars

Safety Stewardship

- Training and emergency response through CHLOREP (the Chlorine Emergency Plan)
- TRANSCAER® sponsorship
- CI *Member Safety and Security Commitment*

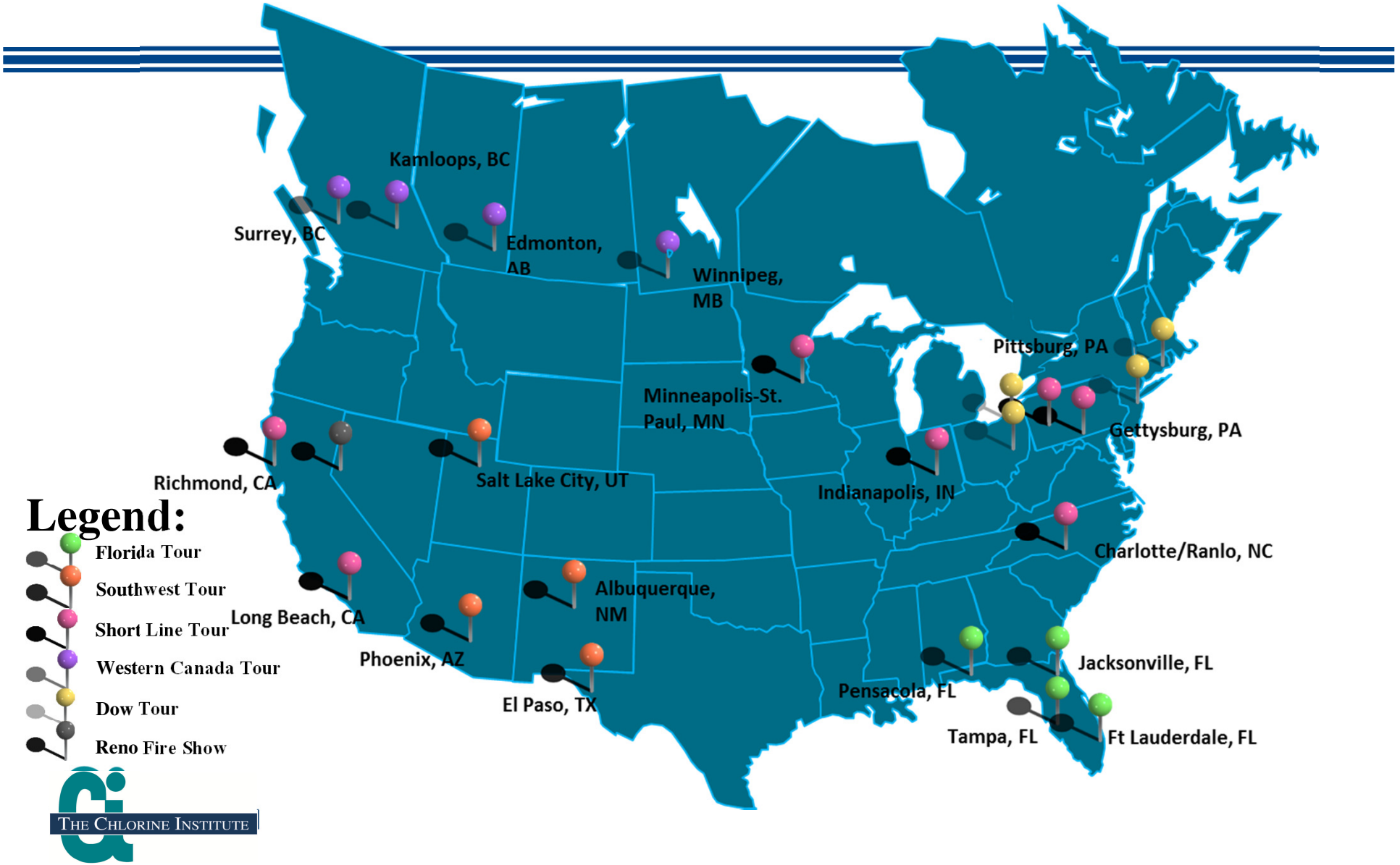
The Chlorine Institute

CI Training Car

- Reflects CI members' safety commitment
- In partnership with Firefighters Education and Training Foundation

THE CHLORINE INSTITUTE

North American Chlorine Safety Tour

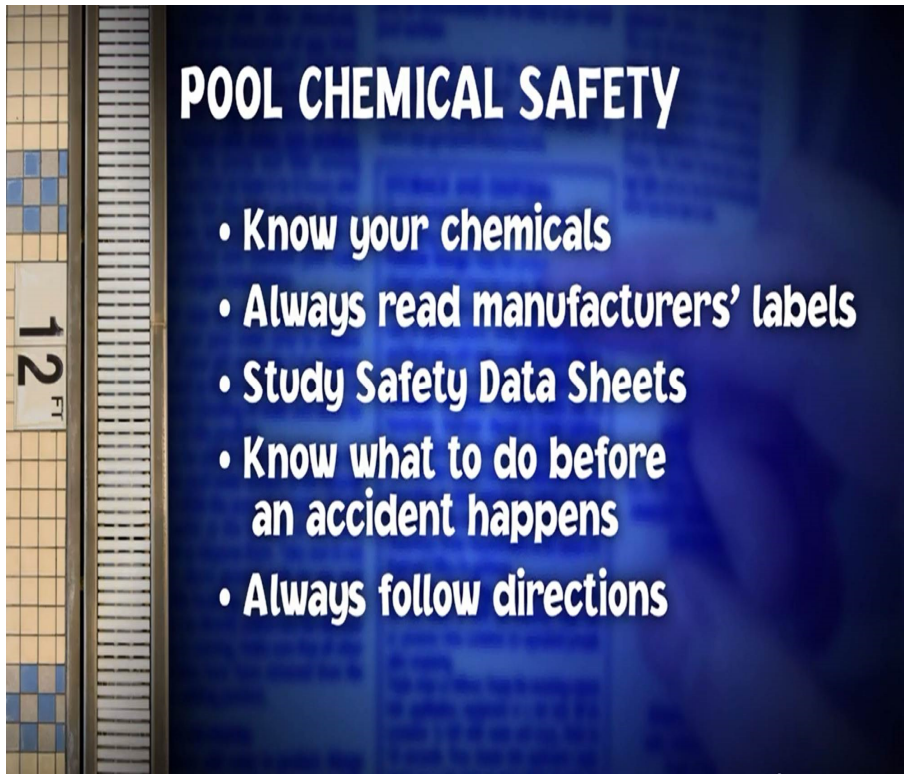


Customer & End User Outreach

Engage & Educate

- Training
- Pamphlets
- Videos
- Checklists
- Personal contact

CI/ACC Video



https://www.youtube.com/watch?v=yN68d9XvUdo

The Chlorine Institute

- Thank you!
- www.chlorineinstitute.org

The Chlorine Institute