



Checklist 3

*Packaged Chlorine
Distributor Customer
Safety and Security*

Edition 2



October 2024

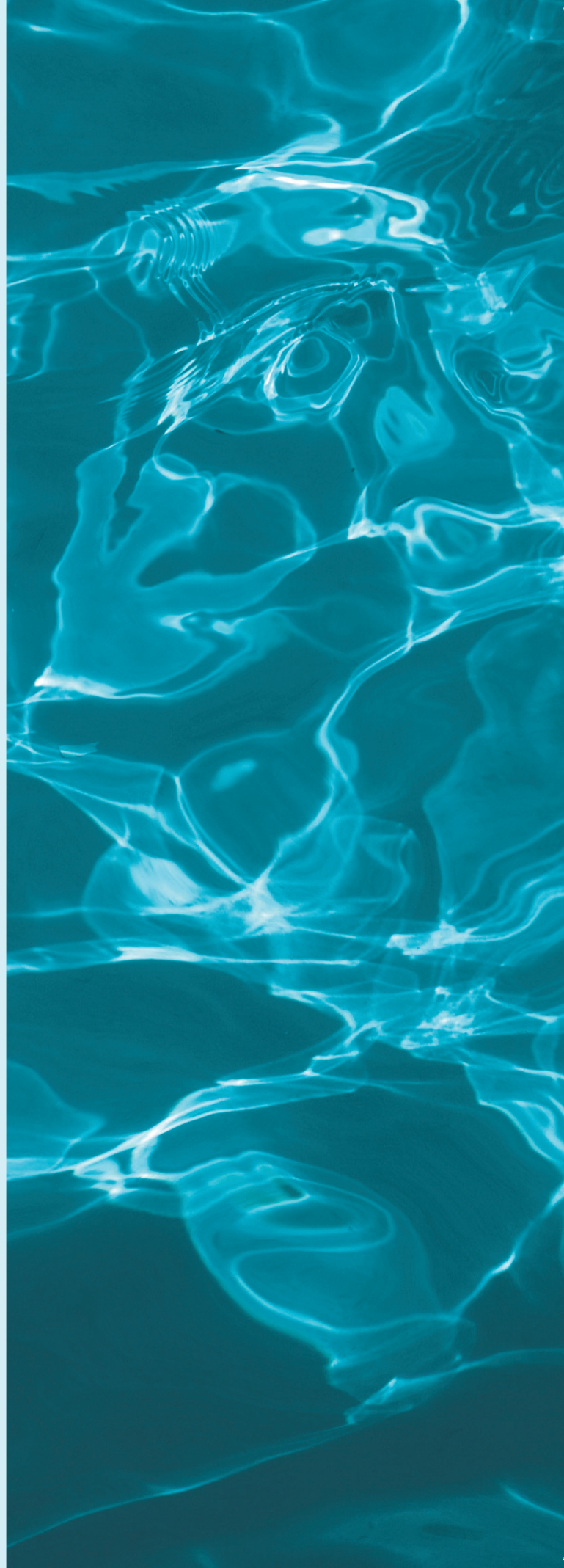


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1. INTRODUCTION

1.1 PURPOSE AND USE

The Chlorine Institute Member Safety and Security Commitment (MSSC) requires chlorine suppliers to ensure that each chlorine customer has an effective risk management program in place for the proper handling of chlorine.

This checklist has been prepared to help chlorine distributors evaluate the capability of North American customers of packaged chlorine (typically 150 lb. cylinders) to safely handle chlorine at the facility where the chlorine is used. The checklist is intended only to provide limited information to assist both the distributor of chlorine and its customers. The checklist emphasizes key chlorine-specific recommendations as developed by the Chlorine Institute. The checklist is intended to supplement Institute publications, not replace them. It is not meant to incorporate regulatory or other requirements that may be applicable to the facility. In the United States, facilities using or otherwise handling chlorine may be affected by the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) Rule for Highly Hazardous Chemicals, 29 CFR 1910.119, and/or the Environmental Protection Agency's (EPA) Risk Management Program (RMP), 40 CFR Part 68. Canadian and Mexican facilities may have similar or other regulatory requirements.

This checklist should be completed by either a representative(s) of the customer facility or by a representative(s) of the chlorine distributor. Both the customer and the distributor should agree in advance on who will complete the checklist and how it will be used. The completed checklist must be kept confidential between the parties unless it is mutually agreed upon that it be released to other parties. The chlorine distributor and customer should have a record retention policy for this checklist and should advise the other party about the policy. The Institute recommends the checklist be completed and used as follows:

- 1) Complete General Customer Information as indicated in Section 2.
- 2) For Sections 2-6, answer each question with a "Yes," "No," or "Not applicable (N/A)" and/or provide a written comment.
 - An "N/A" response is indicated when the item is not applicable to the facility.
 - It is not intended that each item in the completed checklist will have a written comment. Typically, a "Yes" or "N/A" response will not require a comment. Comments should be included when necessary to clarify a response. Such clarification may be helpful to a subsequent reviewer if the response is negative. Some companies may prefer to provide a written comment as a response to a question rather than providing a "Yes" or "No" response. That is acceptable. Comments should be fact-based.

List continues on next page

- 3) Most checklist items include a reference where the item is discussed in more detail in specific Chlorine Institute publications. Section 7 provides a complete listing of such references. **It is recommended that the pamphlets referenced be reviewed when completing the checklist to ensure the item is fully understood.**
- 4) Upon completion of the checklist, the chlorine distributor and customer should discuss the responses and agree to any needed actions or recommendations that would enhance the capability of the chlorine customer to safely unload and handle chlorine.
- 5) The customer should have a process in place to ensure deficiencies are corrected in a timely manner.

See previous page for beginning of list

1.2 CHLORINE INSTITUTE STEWARDSHIP PROGRAM

The Chlorine Institute exists to support the chlor-alkali industry in advancing safe, secure, environmentally compatible, and sustainable production, distribution, and use of its Mission Chemicals.¹

Chlorine Institute members are committed to adopting CI's safety and stewardship initiatives, including pamphlets, checklists, and incident sharing, that will assist members in achieving measurable improvement. For more information on the Institute's stewardship program, visit CI's website at www.chlorineinstitute.org.

1.3 DEFINITIONS AND ACRONYMS

In this pamphlet, the following meanings apply unless otherwise noted:

ACC	American Chemistry Council
ACD	Alliance for Chemical Distribution (formally NACD)
ANSI	American National Standards Institute, Inc.
CFATS	Chemical Facility Anti-Terrorism Standard
CFR	Code of Federal Regulations
CIAC	Chemistry Industry Association of Canada – Formally Canadian Chemical Producers Association (CCPA)
chlorine	dry chlorine, either gas or liquid

¹ CI's mission chemicals: chlorine, sodium and potassium hydroxides, sodium hypochlorite, the distribution of vinyl chloride monomer (VCM), and the distribution and use of hydrogen chloride.

CI/Institute	The Chlorine Institute
DOT	Department of Transportation (U.S.)
EPA	Environmental Protection Agency (U.S.)
LEPC	Local Emergency Planning Committee
MSSC	Member Safety and Security Commitment
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
PSM	Process Safety Management
RDC	Responsible Distribution Canada
RMP	Risk Management Program
SARA Title III (EPA)	Superfund Amendments and Reauthorization Act
SCBA	Self-Contained Breathing Apparatus
SOCMA	Society of Chemical Manufacturers and Affiliates
SDS	Safety Data Sheet
SOP	Standard Operating Procedure

1.4 DISCLAIMER

The information in this document is drawn from sources believed to be reliable. The Institute and its members, jointly and severally, make no guarantee and assume no liability in connection with any of this information. Moreover, it should not be assumed that every acceptable procedure is included or that special circumstances may not warrant a modified or additional procedure. The user should be aware that changes in the applicable laws, regulations or technology may require a change in the recommendations herein. Following the outlined steps are not substitutes for and do not supersede federal, state, provincial, municipal or insurance requirements, or national safety codes.

1.5 PAMPHLET REFERENCE CITATIONS

This checklist contains numerous references, such as CI publications, relevant U.S. Code of Federal Regulations for different agencies, and industry standards, which are listed in an organized manner in Sections 7-9 of this publication. In each location throughout this publication where a reference is made, there will be a citation number immediately following that leads you to the relevant sub-section. As of May 2024, CI began a new format for the inline citations for these references. For example (inline citation shown in bold text),

- Old Format: “See CI Pamphlet 65 (**7.1**) for more details.”
- New Format: “See CI Pamphlet 65^{7.1} for more details.”

This new format will be implemented with new edition publications moving forward.

1.6 APPROVAL

The Product Stewardship Issue Team approved Edition 2 of this pamphlet on October 17, 2024.

1.7 REVISIONS

Suggestions for revision should be directed to the Secretary of the Institute in writing at Secretary@CL2.com.

1.7.1 Significant Revisions in Current Edition

- General – Updated references to CI Pamphlets throughout, eliminated obsolete references, and improved existing citations.
- Section 2 – Added a place to document who completed the Checklist.
- Section 2 – Separated question regarding customers subject to OSHA and EPA regulations.
- Section 5 – Added a question to clearly identify who responds in the event of an emergency.
- Section 5 – Modified question regarding Emergency Response Personal Protective Equipment (PPE) to be broader (the previous question mentioned only Self-Contained Breathing Apparatus (SCBA)).
- Section 5 – Revised inspection question to include Emergency PPE (in addition to Emergency Equipment).
- Section 6 – Expanded this section to include both Storage and Safe Handling and leveraged key questions found in Checklist 2 (as discussed by Task Group).

1.8 REPRODUCTION

The contents of this pamphlet are not to be copied for publication, in whole or in part, without prior Institute permission.

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2. GENERAL CUSTOMER INFORMATION	
Company Name:	
Facility Address:	
Contact Name:	
Title:	Phone:
Email:	Date:
CHECKLIST COMPLETED BY:	
Company Name:	
Representative Name:	
Title:	Phone:
Email:	Date of Completion:

GENERAL CUSTOMER INFORMATION					
<i>Checklist Items</i>	<i>Applicable CI Pamphlets and References</i>	<i>Yes</i>	<i>No</i>	<i>N/A</i>	<i>Comments</i>
2.1 Is the company a member of the Chlorine Institute?	CI Member Safety and Security Commitment (MSSC)^{7.2}				
2.2 Does the facility participate in ACC or CIAC Responsible Care®, ACD or RDC Responsible Distribution or SOCMA ChemStewards® programs?					
2.3 Is the facility subject to the requirements of the U.S. OSHA Process Safety Management (PSM) regulations, 29 CFR 1910.119?	CI Pamphlet 64^{7.1} CI Pamphlet 155 Appendix C: Process Safety Management ^{7.1}				
2.4 Is the facility subject to U.S. EPA Risk Management Program (RMP) regulations, 40 CFR Part 68, and SARA Title III Section 313 release reporting?	CI Pamphlet 64^{7.1} CI Pamphlet 155 Appendix D: Risk Management Program ^{7.1}				
2.5 What is the maximum number of chlorine cylinders and/or ton containers that are stored at this site?					

2.6	Does the facility/company transport chlorine containers?	49 CFR ^{9.1} CI Pamphlet 76 ^{7.1} CI Security Guidance: Security Management Plan for the Transportation and On-Site Storage and Use of Chlorine Cylinders, Ton Containers, and Cargo Tanks ^{7.2}				
2.7	Is the facility located near any sensitive receptors (e.g. residential or commercial area, hospital, school, body of water, wildlife preserve, other sensitive environmental area or major highways)?					

3. SECURITY						
Checklist Items	Applicable CI Pamphlets and References	Yes	No	N/A	Comments	
3.1 Is your facility covered by the Chemical Facility Anti-Terrorism Standard (CFATS), 6 CFR Part 27?*	CI Security Guidance: Site Security Guidance for Chlorine Facilities ^{7.2}					
3.2 If applicable, has the facility conducted a security vulnerability assessment, 6 CFR 27.215?	CI Security Guidance: Site Security Guidance for Chlorine Facilities ^{7.2}					
3.3 If applicable, does the facility have a security plan in place?	CI Security Guidance: Security Management Plan for the Transportation and On-Site Storage and Use of Chlorine Cylinders, Ton Containers, and Cargo Tanks ^{7.2}					
3.4 If transporting chlorine containers, does the facility have a transportation security plan as required by DOT?	49 CFR Part 172 Subpart I ^{9.1} CI Pamphlet 76 ^{7.1}					

*At the time of Checklist 3 publication, the authorization for the CFATS Program had lapsed. However, in keeping with its safety mission, CI supports the CFATS reauthorization efforts underway at the time of publication and, therefore, has kept this item on the Checklist. CI encourages continued safety due diligence in anticipation of the program's reauthorization.

4. PERSONNEL SAFETY AND TRAINING					
Checklist Items	Applicable CI Pamphlets and References	Yes	No	N/A	Comments
4.1 Does the facility have a chlorine-specific training program on safe use and handling of chlorine and document training for employees, new hires, and contractors?	CI Pamphlet 1 Section 7: Employee Training and Safety ^{7.1} CI Pamphlet 65 Section 12: Training in the use of personal protective equipment ^{7.1} CI Pamphlet 76 Section 3: Training ^{7.1} CI Pamphlet 155 Section 9: Employee Training, Safety, and Personal Protection Equipment ^{7.1}				
4.2 Is a current SDS available for chlorine and are warning signs, wall charts, SOPs, and/or other safety information used and visible?	CI Pamphlet 1 Section 7: Employee Training and Safety ^{7.1}				
4.3 Does the facility have a Personal Protective Equipment (PPE) policy for chlorine handling and emergency response?	CI Pamphlet 1 Section 7: Employee Training and Safety ^{7.1} CI Pamphlet 65 Section 4: Personal Protective Equipment Selection – Chlorine ^{7.1}				
4.4 Does the facility policy for respiratory protection comply with CI recommendations for chlorine handling and emergency response?	CI Pamphlet 1 Section 7: Employee Training and Safety ^{7.1} CI Pamphlet 63 ^{7.1} CI Pamphlet 65 Section 4: Personal Protective Equipment Selection – Chlorine ^{7.1}				
4.5 Are accidents and incidents investigated and reviewed with operating and other applicable personnel?					

5. EMERGENCY RESPONSE					
Checklist Items	Applicable CI Pamphlets and References	Yes	No	N/A	Comments
5.1 Does the facility have an up-to-date Emergency Response Plan or Emergency Action plan that includes chlorine?	CI Pamphlet 1 Section 7: Emergency Measures ^{7.1} CI Pamphlet 64 Section 2: Organizational planning, Section 4: Planning for Coordination with Outside Agencies ^{7.1}				
5.2 Has the facility discussed its plan with the local fire department and the Local Emergency Planning Committee (LEPC) if applicable?	CI Pamphlet 64 Section 4: Planning for Coordination with Outside Agencies ^{7.1}				
5.3 In the event of a chlorine release, please indicate the party (or parties) that would respond using the Comment Box to the right.					
5.4 If your facility personnel respond, are emergency responders trained in accordance with local, State or Provincial, and federal requirements?	CI Pamphlet 64 Section 3: Planning for Handling the Emergency ^{7.1}				

5.5	Are periodic emergency response drills or exercises performed at the facility?	CI Pamphlet 64 Section 4: Planning for coordination with outside agencies ^{7.1}				
5.6	Does the facility have access to basic emergency equipment (as appropriate)? <ul style="list-style-type: none"> • Emergency Kit A or B • Recovery Vessel (Salvage Cylinder) • Applicable Emergency Response PPE 	CI Pamphlet 1 Section 7: Emergency Measures ^{7.1} CI Pamphlet 65 Section 4: Personal Protective Equipment – Chlorine ^{7.1} CI Pamphlet 155 Section 10: Emergency Considerations ^{7.1} CI Instruction Booklets IB/A, IB/B and IB/RV ^{7.1} CI A-VIDEO ^{7.1} CI B-VIDEO ^{7.1}				
5.7	Is emergency response equipment and PPE inspected regularly and maintained in suitable condition?	CI Pamphlet 65 Section 11: Maintenance of Personal Protective Equipment ^{7.1} CI Instruction Booklets IB/A, IB/B, and IB/RV ^{7.1}				
5.8	Are windsocks or other means of determining wind direction appropriately located and easily visible from all areas of the facility?	CI Pamphlet 1 Section 6: Emergency Measures ^{7.1} CI Pamphlet 64 Section 3: Planning for Handling the Emergency ^{7.1}				
5.9	Is there a means available to process vent gases and the emergency evacuation of equipment containing chlorine?	CI Pamphlet 89 ^{7.1}				

6. STORAGE AND SAFE HANDLING						
Checklist Items	Applicable CI Pamphlets and References	Yes	No	N/A	Comments	
6.1 Are cylinders and ton containers segregated and properly secured as defined by the applicable fire and building codes and stored away from any heat source?	CI Pamphlet 1 Section 4: Cylinders and Ton Containers ^{7.1} CI Pamphlet 155 Section 7: Building/Structure Concerns ^{7.1}					
6.2 Are cylinder and ton container protective housings in place during storage and shipment?	CI Pamphlet 1 Section 4.6: Cylinder and Ton Container Handling ^{7.1}					
6.3 Are full ton containers stored so that each end is accessible in case an Emergency Kit B is required?	CI Pamphlet 17 Section 2: Packaging Plant Design and Maintenance ^{7.1}					
6.4 Are supplier U.S. EPA FIFRA Labels properly left in place, attached to containers at all times?	CI Pamphlet 17 Section 11: Key Regulations and Codes ^{7.1}					
6.5 Does the facility have chlorine monitoring equipment in cylinder and ton container storage areas for leak detection?	CI Pamphlet 64 Section 3: Planning for Handling the Emergency ^{7.1} CI Pamphlet 73 ^{7.1} CI Pamphlet 155 Section 7: Building/Structure Concerns ^{7.1}					

6.6	Is the chlorine monitoring equipment integrated with an alarm system and routinely inspected and calibrated to appropriate setpoints?	CI Pamphlet 64 Section 3: Planning for Handling the Emergency ^{7.1} CI Pamphlet 73 ^{7.1} CI Pamphlet 155 Section 7: Building/Structure Concerns ^{7.1}				
6.7	Does the facility have an inventory management accountability system for tracking chlorine containers?	CI Pamphlet 17 Appendix C: Chlorine Ton and Cylinder Inventory Accountability ^{7.1}				
6.8	Do piping, hoses, and all components used for chlorine service comply with recommendation of CI?	CI Pamphlet 6 ^{7.1} CI Pamphlet 95 ^{7.1}				
6.9	Are transfer equipment and process piping component routinely inspected and tested or replaced on a preventive maintenance basis?	CI Pamphlet 6 Section 12: Routine and Periodic Inspection and Maintenance ^{7.1}				
6.10	If using a chlorine vaporizer system, does the facility follow the guidance of CI?	CI Pamphlet 9 ^{7.1}				
6.11	Are written operating procedures available and being utilized by employees that address the appropriate steps for connecting and disconnecting cylinders and ton containers?	CI Pamphlet 155 Section 6: Connecting and Unloading to the System ^{7.1}				

6.12 Are safety showers and eyewash stations appropriately located and easily accessible from all areas?	CI Pamphlet 1 Section 7: Employee Training and Safety ^{7.1} ANSI Standard Z358.1 ^{8.1}				
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7. REFERENCES

7.1 CI REFERENCES

The following publications are specifically referenced in CI Checklist 3. The latest editions of CI publications may be obtained at:

<http://www.chlorineinstitute.org>. <http://www.chlorineinstitute.org/>.

CI Pamphlet #.

Instruction Booklet, and Video

Title

1	<i>Chlorine Basics</i> , ed. 9; Pamphlet 1; The Chlorine Institute: Arlington, VA, 2023 .
6	<i>Piping Systems for Dry Chlorine</i> , ed. 17; Pamphlet 6; The Chlorine Institute: Arlington, VA, 2020 .
9	<i>Chlorine Vaporizing Systems</i> , ed. 9; Pamphlet 9; The Chlorine Institute: Arlington, VA, 2024 .
17	<i>Packaging Plant Safety and Operational Guidelines</i> , ed. 6; Pamphlet 17; The Chlorine Institute: Arlington, VA, 2023 .
63	<i>First Aid, Medical Management/Medical Evaluation and Occupational Hygiene Monitoring Practices for Chlorine</i> , ed. 10; Pamphlet 63; The Chlorine Institute: Arlington, VA, 2023 .
64	<i>Emergency Response Plans for Chlor-Alkali, Sodium Hypochlorite, and Hydrogen Chloride Facilities</i> , ed. 8; Pamphlet 64; The Chlorine Institute: Arlington, VA, 2020 .
65	<i>Personal Protective Equipment for Chlor-Alkali Chemicals</i> , ed. 7; Pamphlet 65; The Chlorine Institute: Arlington, VA, 2021 .
73	<i>Atmospheric Monitoring Equipment for Chlorine</i> , ed. 9; Pamphlet 73; The Chlorine Institute: Arlington, VA, 2021 .
76	<i>Guidelines for the Safe Motor Vehicular Transportation of Chlorine Cylinders and Ton Containers</i> , ed. 7; Pamphlet 76; The Chlorine Institute: Arlington, VA, 2024 .
89	<i>Chlorine Scrubbing Systems</i> , ed. 5; Pamphlet 89; The Chlorine Institute: Arlington, VA, 2021 .

95	<i>Gaskets for Chlorine Service</i> , ed. 6; Pamphlet 95; The Chlorine Institute: Arlington, VA, 2021 .
155	<i>Water and Wastewater Operators Chlorine Handbook</i> , ed. 4; Pamphlet 155; The Chlorine Institute: Arlington, VA, 2023 .
IB/A	<i>Instruction Booklet: Chlorine Institute Emergency Kit “A” for 100-lb and 150-lb Chlorine Cylinders</i> , ed. 13 revision 1; IB/A; The Chlorine Institute: Arlington, VA, 2023 .
IB/B	<i>Instruction Booklet: Chlorine Institute Emergency Kit “B” for Chlorine Ton Containers</i> , ed. 12 revision 1; IB/B; The Chlorine Institute: Arlington, VA, 2023 .
IB/RV	<i>Instruction Booklet: Chlorine Institute Recovery Vessel (Salvage Cylinder) for 100-lb. and 150-lb. Chlorine Cylinders</i> , ed. 3; IB/RV; The Chlorine Institute: Arlington, VA, 2021 .
A Video	<i>Emergency Kit “A” and Recovery Vessel Instructional Video</i> , ed. 4; A-VIDEO; The Chlorine Institute: Arlington, VA, 2014 .
B Video	<i>Emergency Kit “B” for Chlorine Ton Containers</i> , ed. 3; B-VIDEO; The Chlorine Institute: Arlington, VA, 2014 .

7.2 OTHER CHLORINE INSTITUTE REFERENCES

- 7.2.1 *CI Security Guidance – Site Security Guidance for Chlorine Facilities*; The Chlorine Institute: Arlington, VA, **2019**.
- 7.2.2 *CI Security Guidance – The Security Management Plan for the Transportation and On-Site Storage and Use of Chlorine Cylinders, Ton Containers, and Cargo Tanks*, ed. 1; The Chlorine Institute: Arlington, VA, **2019**.
- 7.2.3 *The Chlorine Institute – Member Safety and Security Commitment (MSSC)*, The Chlorine Institute: Arlington, VA, **2024**.

8. **PRINT PUBLICATION REFERENCES**

8.1 ANSI PUBLICATIONS

ANSI/ISEA Z358.1-2014 (R2020) American National Standard for Emergency Eyewash and Shower Equipment, ANSI: Washington D.C. **2014**.

9. REGULATION REFERENCES

9.1 US GOVERNMENT REGULATIONS AND SPECIFICATIONS

All U.S. regulations and specifications are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401.

Website: www.gpo.gov

9.1.1 American National Standards (ANSI)

Website: <https://webstore.ansi.org/>

9.1.2 Code of Federal Regulations (CFR)

Website:

<https://www.ecfr.gov/cgi-bin/ECFR?page=browseprevious&ptid=00000000&SID=4976978cb264d9070493e1814ff6093e>

- DHS Regulations (CFR Title 6)

Website: <https://www.dhs.gov/key-dhs-laws>

Website: <https://www.ecfr.gov/current/title-6>

- DOT Regulations (CFR Title 49)

Website: <https://www.ecfr.gov/current/title-49>

- EPA Regulations (CFR Title 40)

Website: <https://www.ecfr.gov/current/title-40>

- OSHA Regulations (CFR Title 29)

Website: <https://www.osha.gov/law-regs.html>

Website: <https://www.ecfr.gov/current/title-29>

9.2 CANADIAN REGULATIONS

9.2.1 Canadian Environmental Protection Act, 1999 (CEPA 1999) and E2 Regulations; Environment Canada: Gatineau, Quebec, **2013**.

Website: <https://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=26A03BFA-1>

CEPA 1999 Act: https://www.ec.gc.ca/lcpe-cepa/26A03BFA-C67E-4322-AFCA-2C40015E741C/lcpe-cepa_201310125_loi-bill.pdf

E2 Regulations: <https://www.canada.ca/en/environment-climate-change/services/environmental-emergencies-program/regulations.html>

- 9.2.2 Canadian Transportation of Dangerous Goods Act and Regulations; Transport Canada: Ottawa, Ontario, **2009**.

Website: <http://tc.gc.ca/tdg>

9.3 OTHER REFERENCES

- 9.3.1 CIAC Responsible Care®

Website: <https://canadianchemistry.ca/responsible-care/>

- 9.3.2 EPA SARA Title III

Website: <https://www.epa.gov/laws-regulations/summary-emergency-planning-community-right-know-act>

- 9.3.3 SOCMA ChemStewards®

Website: <https://www.socma.org/operations-manufacturing/chemstewards/>



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