

**2026**



**SAFETY**  
**RESOURCE**  
**CATALOG**



## About CI

The Chlorine Institute (CI) founded in 1924, is a technical trade association that exists to support the chlor-alkali industry in advancing safe, secure, environmentally compatible, and sustainable production, distribution, and use of its mission chemicals\*.

*\*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.*

## Mission Statement

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\*.

*\*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.*

## Goals

The Chlorine Institute accomplishes its mission by:

Improving the safety, human health and environmental protection performance of chlor-alkali producers, packagers, distributors, and users.

Fostering the development of regulations that support the achievement of continuous improvement and voluntary mechanisms that preclude the need for new government regulations.

Positioning the Institute as an authoritative and credible source of technical and safety related information and emergency response procedures to prevent and mitigate the release of chlorine and other mission chemicals.

## Stewardship Commitment

As part of its core mission, in an effort to protect human health and the environment, The Chlorine Institute ("CI" or "The Institute") supports the chlor-alkali industry, their customer end users, and serves the public by fostering continuous technical and safety improvements as it relates to the handling and use of CI mission chemicals.



## Publications

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## 1. PAMPHLETS

### PAMPHLET 1) CHLORINE BASICS

Contains basic information, including properties and physiological effects of chlorine, description and rules for handling chlorine containers, emergency measures and first aid, and chemical and physical characteristics.

Edition 9 – March 2023

### PAMPHLET 5) BULK STORAGE OF LIQUID CHLORINE

This pamphlet is intended to assist in the design, construction, location, installation, and inspection of liquid chlorine storage systems. The recommendations are based on storage in horizontal, cylindrical tanks. This pamphlet does not apply to in-process pressure equipment (e.g., heat exchangers, vaporizers).

Edition 10 – July 2022

### PAMPHLET 6) PIPING SYSTEMS FOR DRY CHLORINE

This publication is intended to provide useful information concerning chlorine piping for both permanent production and use facilities, as well as temporary transportation systems. Pressure vessels and DOT containers are excluded from the scope of this pamphlet. It contains information on selected piping, valves, hoses, and fittings suitable for use with dry chlorine (gas or liquid) within the range of -150°F (-101°C) and 300°F (9°C). There is also guidance on preparations for use and maintenance practices.

Edition 18 – September 2025

### PAMPHLET 9) CHLORINE VAPORIZING SYSTEMS

This pamphlet is intended to assist in the selection, design, safe operation and maintenance of chlorine vaporizer systems. It is limited to those who receive liquid chlorine in cylinders, ton containers, via pipeline, in cargo tanks or tank cars and who will vaporize liquid for ultimate use of the chlorine as a gas. It is not intended for chlorine processing systems such as reboilers and complex distribution systems.

Edition 9 – April 2024

### PAMPHLET 10) NORTH AMERICAN CHLOR-ALKALI INDUSTRY FACILITIES AND PRODUCTION DATA REPORT

Lists location of chlor-alkali plants, chlorine packaging facilities, and sodium hypochlorite production facilities with types of cells and shipping containers loaded at each location. A table lists Sodium Hypochlorite Production facilities in North America. Includes annual data on chlorine capacity, production and shipments in the U.S., Canada, and Mexico, some by geographical distribution. Updated annually.

Edition 2023 – December 2024

PAMPHLET 17) PACKAGING PLANT SAFETY AND OPERATIONAL GUIDELINES

The purpose of this pamphlet is primarily to provide both operational recommendations and safety information for employees at facilities that package 100 lb. (45 kg) and 150 lb. (68 kg) cylinders and ton containers (907 kg) of chlorine. It contains recommendations for receiving, inspecting, testing and reconditioning chlorine cylinders, ton containers, valves and fusible plugs at packaging plants. It also covers recommendations for filling these containers, personal protective equipment use, tank car receiving, emergency planning/response, and key regulations.

Edition 6 – June 2023

PAMPHLET 21) NITROGEN TRICHLORIDE – A COLLECTION OF REPORTS AND PAPERS

This pamphlet is a compilation of largely unpublished information considered important to understand the formation of and associated hazards of nitrogen trichloride.

Edition 8 – August 2023

PAMPHLET 49) RECOMMENDED PRACTICES FOR HANDLING CHLORINE BULK HIGHWAY TRANSPORTS

Provides guidelines, recommended practices, and other useful information for the safe shipping, receiving, loading, unloading, maintenance, and emergency response relevant to handling cargo tank motor vehicles and portable tanks used to transport chlorine by highway. This pamphlet also refers to the applicable regulatory requirements.

Edition 11 – June 2022

PAMPHLET 57) EMERGENCY SHUTOFF SYSTEMS FOR BULK TRANSFER OF CHLORINE

Recommends practices for emergency shut-off protection during chlorine transfers involving bulk containers.

Edition 7 – November 2020

PAMPHLET 60) CHLORINE PIPELINES

Provides recommendations on the design, construction, operation, and maintenance of carbon steel pipelines that transport chlorine liquid or gas. The recommendations are applicable to pipelines that terminate outside the chlorine shipper's property or crosses property not owned by the shipper or receiver of the chlorine.

Edition 8 – September 2019

PAMPHLET 63) FIRST AID, MEDICAL MANAGEMENT/MEDICAL EVALUATION AND OCCUPATIONAL HYGIENE MONITORING PRACTICES FOR CHLORINE

This pamphlet provides information for the administration of first aid and medical treatment for anyone who has been exposed to gaseous or liquid chlorine. In addition, this pamphlet provides information pertaining to the administration of medical evaluation programs, exposure assessment programs, and industrial hygiene practices for persons who may be potentially exposed to chlorine.

Edition 10 – January 2023

PAMPHLET 64) EMERGENCY RESPONSE PLANS FOR CHLOR-ALKALI, SODIUM HYPOCHLORITE, AND HYDROGEN CHLORIDE FACILITIES

This publication is intended to give the user the basics of an emergency response plan. Such a plan would be utilized during an accidental release or potential accidental release of chlorine, sodium hydroxide, potassium hydroxide, sodium hypochlorite, anhydrous hydrogen chloride, or hydrochloric acid (collectively referred to in this pamphlet as chlor-alkali products) or in response to a breach in security to minimize the impact of such an incident.

Edition 8 – January 2020

PAMPHLET 65) PERSONAL PROTECTIVE EQUIPMENT FOR CHLOR-ALKALI CHEMICALS

The scope of this pamphlet includes most types of PPE recommended for specific tasks and for emergency response in the manufacture and use of chlorine (liquid and gas), sodium and potassium hydroxide (10 – 50% by weight), sodium hypochlorite solutions (3 – 20% by weight), hydrochloric acid (7 – 37% by weight), sulfuric acid (38 – 98% by weight), and anhydrous hydrogen chloride (liquid and gas) all at temperatures below 120°F (49°C). It contains PPE recommendations for initial line break, material sampling, loading, unloading, and emergency response. There is also a discussion on escape respirators.

Edition 8 – July 2025

PAMPHLET 66) RECOMMENDED PRACTICES FOR HANDLING CHLORINE TANK CARS

Provides guidelines, recommended practices and other useful information to personnel involved in the shipping, receiving, loading, unloading, maintenance, and emergency response relevant to chlorine tank cars. This pamphlet also refers to the applicable regulatory requirements and industry standards.

Edition 6 – October 2022

PAMPHLET 72) PROPERTIES OF CHLORINE IN SI UNITS

This pamphlet is based on research dating back to 1900. It is a unique pamphlet in The Chlorine Institute's library because it contains thermodynamic data and does not contain safety recommendations. Data in this pamphlet include density, volume, vapor pressure, heat capacity ratio, compressibility, enthalpy, entropy, fugacity coefficient, Joule Thompson coefficient, velocity of sound, surface tension, thermal conductivity, and viscosity of chlorine.

Edition 4 – January 2019

PAMPHLET 73) ATMOSPHERIC MONITORING EQUIPMENT FOR CHLORINE

This pamphlet is intended to assist in the selection, installation, maintenance, calibration and safe operation of stationary chlorine monitors. Personal monitors are beyond the scope of this pamphlet.

Edition 9 – March 2021

PAMPHLET 74) GUIDANCE ON ESTIMATING THE AREA AFFECTED BY A CHLORINE RELEASE

The intent of this pamphlet is to provide a simplified document to assist chlorine producers/users, local emergency planning committees, fire departments, and municipalities in estimating the area affected by a chlorine release for emergency planning and hazard assessment purposes, and to provide a general understanding of the expectations of chlorine cloud release scenarios. The Department of Homeland Security (DHS) Chemical Security Analysis Center (CSAC), part of the Science and Technology Directorate (S&T), collaborated with the Chlorine Institute to develop updated guidance in this version of Pamphlet 74, based upon new experimental research into chlorine releases and the associated chemical and physical phenomena. The Hazard Prediction and Assessment Capability (HPAC) model, developed and widely used by the U.S. Government officials only, was used to simulate the release scenarios in this pamphlet to provide new modeling results.

Edition 7 – October 2019

PAMPHLET 76) GUIDELINES FOR THE SAFE MOTOR VEHICULAR TRANSPORTATION OF CHLORINE CYLINDERS AND TON CONTAINERS

Provides guidelines, recommended practices and other useful information, including guidance on securement, segregation, driver training, emergency response and regulatory requirements, for shipping chlorine cylinders and ton containers on the highways.

Edition 7 – March 2024

PAMPHLET 80) RECOMMENDED PRACTICES FOR HANDLING SODIUM HYDROXIDE SOLUTION AND POTASSIUM HYDROXIDE SOLUTION (CAUSTIC) BARGES

Provides guidelines, recommended practices and other useful information for the safe shipping, receiving and handling of sodium hydroxide solution and potassium hydroxide solution in barges. This pamphlet also refers to the applicable regulatory requirements.

Edition 5 – November 2019

PAMPHLET 82) RECOMMENDATIONS FOR USING 100 AND 150 POUND CHLORINE CYLINDERS AT SWIMMING POOLS

Designed to provide basic information for the safe handling and use of chlorine cylinders kept on site at swimming pools.

Edition 4 – May 2024

PAMPHLET 86) RECOMMENDATIONS TO FACILITIES FOR THE PREVENTION OF CHLORINE RELEASES

This pamphlet is intended to provide useful information to chlor-alkali manufacturing facilities to help prevent the occurrence, or minimize the consequences, of uncontrolled releases of chlorine.

Edition 7 – July 2022

PAMPHLET 87) RECOMMENDED PRACTICES FOR HANDLING SODIUM HYDROXIDE SOLUTION AND POTASSIUM HYDROXIDE SOLUTION (CAUSTIC) TANK CARS

Provides guidelines, recommended practices and other useful information for the safe shipping, receiving, loading, unloading and maintenance relevant to handling sodium hydroxide solution and potassium hydroxide solution in tank cars. This pamphlet also refers to the applicable regulatory requirements and industry standards.

Edition 5 – July 2018

PAMPHLET 88) RECOMMENDED PRACTICES FOR HANDLING SODIUM HYDROXIDE SOLUTION AND POTASSIUM HYDROXIDE SOLUTION (CAUSTIC) IN BULK HIGHWAY TRANSPORTS

Provides guidelines, recommended practices and other useful information for the safe shipping, receiving, loading, unloading and maintenance relevant to handling sodium hydroxide solution and potassium hydroxide solution in bulk highway transports. This pamphlet also refers to the applicable regulatory requirements.

Edition 5 – June 2022

PAMPHLET 89) CHLORINE SCRUBBING SYSTEMS

This pamphlet intends to provide general guidance and source information for chlorine producers and consumers for the effective containment and treatment of their gaseous chlorine effluents. The information in this pamphlet is written primarily for sodium hydroxide solutions and their reactions with chlorine. However, selected properties of some other chemicals can be found in the Appendix.

Edition 5 – March 2021

PAMPHLET 91) CHECKLIST FOR CHLORINE PACKAGING PLANTS

This pamphlet is in a checklist format and is designed for use by chlorine packagers.

Edition 5 – January 2020

PAMPHLET 94) SODIUM HYDROXIDE SOLUTION AND POTASSIUM HYDROXIDE SOLUTION (CAUSTIC) STORAGE EQUIPMENT AND PIPING SYSTEMS

This publication is intended to provide useful information concerning the storage and piping of sodium hydroxide and potassium hydroxide solutions. This pamphlet's objective is to offer practical suggestions in the design, construction and operation of systems suitable for up to 73 wt% solutions of sodium hydroxide and for up to 50 wt% potassium hydroxide. The requirements of anhydrous sodium hydroxide and anhydrous potassium hydroxide have not been considered.

Edition 6 – April 2024

PAMPHLET 95) GASKETS FOR CHLORINE SERVICE

This pamphlet is intended to provide manufacturers, packagers, and consumers of chlorine with practical information that can be used to improve safety and environmental performance by helping to prevent failures and minimize fugitive emissions from gasketed connections in dry and wet chlorine service. The pamphlet provides guidance for gasket material selection and gasket installation. This pamphlet lists gaskets that have found user acceptance in chlorine service. NOTE: The Chlorine Institute does not approve, rate, certify or endorse any gasket. The information on gaskets and gasket materials contained in this pamphlet reflects information obtained from member companies in their use and/or evaluation of the gasket or gasket material.

Edition 6 – January 2021

PAMPHLET 96) SODIUM HYPOCHLORITE MANUAL

Contains information for the safe production, handling and use of both industrial and household strength bleach solutions. Provides basic information on useful physical and chemical properties, as well as compatible materials, handling systems and pertinent analytical procedures, emergency response, stability factors, and security issues.

Edition 5 – September 2017

PAMPHLET 98) RECOMMENDED PRACTICES FOR HANDLING HYDROCHLORIC ACID IN TANK CARS

Provides guidelines, recommended practices and other useful information for the safe shipping, receiving, loading, unloading, maintenance, and emergency response relevant to handling hydrochloric acid in tank cars. This pamphlet also refers to the applicable regulatory requirements and industry standards.

Edition 5 – December 2019

PAMPHLET 100) BEHAVIOR AND MEASUREMENT OF MOISTURE IN CHLORINE

The primary purpose of this pamphlet is to provide practical temperature and pressure criteria which can be used to define chlorine as non-corrosive, which we refer to as "DRY" chlorine for use in carbon steel equipment. Chlorine that does not meet the criteria of "DRY" will be considered "WET" and will have a moisture content that can cause a rapid corrosion of steel. The criteria corresponding to "DRY" chlorine must be determined for each chlorine facility. There isn't one value of "Dryness" applicable over the entire range of use of chlorine in production and commerce. The pamphlet provides a basis for facilities to determine acceptable moisture limits. This pamphlet also presents the methods for measuring moisture in chlorine and discusses sources of contamination during sampling and analysis. The appendices provide additional information on chlorine sampling, additional technical information, and the basis on the definition of "DRY" chlorine and its effect on corrosion.

Edition 6 – February 2024

PAMPHLET 121) EXPLOSIVE PROPERTIES OF GASEOUS MIXTURES CONTAINING HYDROGEN AND CHLORINE: OPERATIONAL GUIDANCE AND RESEARCH REFERENCES

This pamphlet brings together in a single source all known pertinent, published references on explosive properties of gaseous mixtures containing hydrogen and chlorine. The reaction characteristics of hydrogen mixed with chlorine, oxygen and inert gases information is based on the literature review of reaction characteristics of hydrogen with chlorine and with mixtures of chlorine and oxygen, and represents an attempt to graphically show ignition and detonation zones for the systems hydrogen-chlorine-oxygen and hydrogen-chlorine-air. It also provides guidance on how to practically apply insights from the data and literature to safely operate chlorine liquefaction and other chlor-alkali processes.

Edition 5, Revision 1 – January 2025

PAMPHLET 137) GUIDELINES: ASBESTOS HANDLING FOR THE CHLOR-ALKALI INDUSTRY

This pamphlet provides guidance on the safe asbestos handling practices for the chlor-alkali industry and highlights North American regulatory requirements.

Edition 8 – September 2021

PAMPHLET 139) ELECTRICAL SAFETY IN CHLOR-ALKALI CELL FACILITIES

This pamphlet provides information regarding electrical safety, including identification of hazards, electrical health effects on the body, preventative measures, and first aid, for those responsible for operations and maintenance in chlor-alkali facilities.

Edition 7 – July 2024

PAMPHLET 150) RECOMMENDED PRACTICES FOR HANDLING HYDROCHLORIC ACID IN BULK HIGHWAY TRANSPORTS

Provides guidelines, recommended practices and other useful information for the safe shipping, receiving, loading, unloading, maintenance, and emergency response relevant to handling of hydrochloric acid in bulk highway transports. This pamphlet also refers to the applicable regulatory requirements.

Edition 4 – March 2020

PAMPHLET 152) SAFE HANDLING OF CHLORINE CONTAINING NITROGEN TRICHLORIDE

This pamphlet provides useful information to producers, distributors, repackagers, and users of chlorine. It discusses nitrogen trichloride, a trace impurity commonly found in chlorine that could lead to the explosive decomposition of nitrogen trichloride in chlorine containing systems, including nitrogen trichloride properties, hazard awareness, controls, and formation prevention.

Edition 5 – August 2024

PAMPHLET 155) WATER AND WASTEWATER OPERATORS CHLORINE HANDBOOK

Provides basic information on chlorine safety and handling necessary for treatment plant personnel and other users of cylinders or ton containers.

Edition 4 – June 2023

PAMPHLET 163) HYDROCHLORIC ACID STORAGE EQUIPMENT AND PIPING SYSTEMS

Provides useful information concerning the storage and piping of hydrochloric acid solutions and offers practical suggestions in the design, construction and operation of these systems.

Edition 5 – October 2024

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PAMPHLET 164) REACTIVITY AND COMPATIBILITY OF CHLORINE, SODIUM HYDROXIDE, AND POTASSIUM HYDROXIDE WITH VARIOUS MATERIALS

This pamphlet is intended to provide information to producers, users, and handlers of chlorine and/or 50% sodium and potassium hydroxides concerning the compatibility of these two substances with a variety of materials and their reactivity with other chemicals. The information considers only those materials and chemicals typically found in facilities producing, using, or otherwise handling chlorine and/or sodium and potassium hydroxides and is not meant to be an exhaustive list. This pamphlet is not intended to provide detailed technical information needed by process engineers nor is it intended to provide economic evaluations of compatible materials. While the information provided should be of help to emergency responders, this pamphlet is not intended to provide technical guidance to the first persons on the scene in an emergency response. This pamphlet does not address nitrogen trichloride.

Edition 4 – January 2023

PAMPHLET 165) INSTRUMENTATION FOR CHLORINE SERVICE

This pamphlet is intended to assist the chlor-alkali industry in management of instrumentation systems. It includes information on the design as well as the maintenance of the instrumentation systems. It provides guidance on the selection of materials, the selection of primary elements and control devices, and the design and installation of instrumentation, including the sensing lines for wet and dry chlorine gas and dry liquid chlorine service. Only critical instrumentation issues related to chlorine applications are addressed. The recommendations of this pamphlet are based on the experience of chlorine producers and consumers and represent current industry practices. It is not the intent of this pamphlet to limit the use of specific materials or instruments, provided they have been engineered for the specific design conditions and the particular requirements of chlorine service. This pamphlet does not address sample collection equipment, chlorine analysis equipment, or general instrumentation practices. However, operators of chlorine systems should consider the need for on-line (continuous) analysis of the chlorine for impurities such as nitrogen trichloride, water, or hydrogen, and follow up with research of the various analyzer manufacturers available. It also includes information on the elements of an effective maintenance program.

Edition 4 – January 2023

PAMPHLET 166) GUIDELINES FOR TRADITIONAL SERVICE EQUIPMENT DESIGNS FOR CHLORINE BULK TRANSPORT

Provides performance/selection criteria for traditional angle valves installed on bulk chlorine transportation equipment. An appendix includes information and drawings on valves that meet these criteria.

Edition 2 – September 2024

PAMPHLET 167) *LEARNING FROM EXPERIENCE*

This pamphlet summarizes several incidents that have occurred in chlorine production, chlorine packaging, sodium hypochlorite production and user facilities pertaining to the chlor-alkali industry. No nitrogen trichloride incidents are included; those are available in CI Pamphlet 21) Nitrogen Trichloride – A Collection of Reports and Papers.

Edition 4 – April 2020

PAMPHLET 168) *GUIDELINES FOR DUAL VALVE SYSTEMS FOR BULK CHLORINE TRANSPORT*

Provides performance/selection criteria for dual valve systems installed on bulk chlorine transportation equipment. An appendix includes information and drawings on valves that meet these criteria.

Edition 3 – April 2024

PAMPHLET 170) *HYDROGEN CHLORIDE, ANHYDROUS (AHCL), REFRIGERATED LIQUID (UN 2186), TANK CAR AND CARGO TANK HANDLING MANUAL*

Provides guidelines, recommended practices and other useful information for the safe shipping, receiving, loading, unloading, maintenance, and emergency response relevant to anhydrous hydrogen chloride (AHCl), refrigerated liquid (UN 2186), in rail tank cars and highway cargo tanks. This pamphlet also refers to applicable regulatory requirements and industry standards.

Edition 3 – April 2024

PAMPHLET 171) *VINYL CHLORIDE MONOMER (VCM) TANK CAR AND CARGO TANK HANDLING MANUAL*

Provides guidelines, recommended practices and other useful information for the safe shipping, receiving, loading, unloading, maintenance, and emergency response relevant to vinyl chloride monomer (VCM) transported in rail tank cars and highway cargo tanks. This pamphlet also refers to the applicable regulatory requirements and industry standards. While this pamphlet is focused on the transport of VCM (a compressed liquefied flammable gas), it also considers guidance for vinyl chloride (the gaseous state of VCM), also known as chloroethylene or chloroethane. This pamphlet was developed in coordination with the Vinyl Institute.

Edition 1 – July 2018

PAMPHLET 172) *LIQUID VINYL CHLORIDE MONOMER (VCM) PIPELINES*

Provides recommendations on the design, construction, operation, and maintenance of carbon steel pipelines that transport liquid Vinyl Chloride Monomer (VCM). The recommendations are applicable to pipelines that terminate outside the VCM shipper's property or crosses property not owned by the shipper or receiver of the VCM. This pamphlet was developed in coordination with the Vinyl Institute.

Edition 1 – May 2021

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PAMPHLET 173) HYDROGEN HANDLING IN CHLOR-ALKALI FACILITIES

The primary purpose of this pamphlet is to provide a consolidated repository of Chlorine Institute materials pertaining to hydrogen systems found in chlor-alkali production facilities. This document will give guidance about hydrogen handling in a gaseous state, liquefaction and liquefied hydrogen fall outside the scope of this document.

Edition 1 – September 2021

PAMPHLET 174) GUIDELINES ON TANK CAR OWNER RESPONSIBILITIES IN QUALIFICATION AND MAINTENANCE

This pamphlet provides guidelines and other useful information about tank car owner responsibilities as it relates to tank car qualification and maintenance requirements. This guidance covers the regulatory and industry standard requirements for tank cars, service equipment, and coatings/linings.

Edition 1 – April 2024

PAMPHLET 176) GUIDELINES FOR CONDUCTING ROOT CAUSE ANALYSIS OF TRANSPORTATION INCIDENTS

working title - fill in description when completed (seeking agreement from TRN IT during Annual Meeting)

Edition 1 – November 2024

## 2. VIDEOS

### A-VIDEO) EMERGENCY KIT "A" AND RECOVERY VESSEL INSTRUCTIONAL VIDEO

This video provides guidance on troubleshooting chlorine leaks from 100-lb and 150-lb cylinders and instructions on how to apply the A-Kit and recovery vessel.

Edition 5 – June 2018

### AM-VIDEO) ACCIDENTAL MIXING

This video is designed to increase awareness about the risks of accidentally mixing sodium hypochlorite with other incompatible materials. The training video topics include: Basic Properties of Sodium Hypochlorite; Sodium Hypochlorite Reactions and Unintended Consequences; Two Case Studies (Atchison, Kansas and Kitchener, Ontario); Common Contributing Factors; and Safeguards for Drivers, Customers, and Suppliers; and additional resources.

Edition 1 – June 2018

### B-VIDEO) EMERGENCY KIT "B" FOR CHLORINE TON CONTAINERS

This video provides guidance on troubleshooting chlorine leaks from one-ton containers and instructions on how to apply the B-Kit.

Edition 4 – January 2025

### CAUS-VIDEO) PREVENTING NON-ACCIDENT RELEASES BY PROPERLY SECURING CAUSTIC RAILCARS

This video provides guidance for reducing non-accident releases (NARs) from tank car shipments of caustic (sodium hydroxide (NaOH) and potassium hydroxide (KOH)). Topics covered include the definition of an NAR, U.S. Department of Transportation incident reporting requirements, loader and unloader responsibilities, best practices to reduce caustic tank car NARs and available guidance and resources, such as additional Chlorine Institute guidance.

Edition 2, Revision 1 – January 2025

### CLS-VIDEO) PREVENTING NON-ACCIDENT RELEASES FROM CHLORINE RAILCARS BY PROPERLY SECURING RETURN SHIPMENTS

This video provides guidance for reducing non-accident releases (NARs) from chlorine residue tank car shipments. Topics covered include the definition of an NAR, U.S. Department of Transportation incident reporting requirements, shipper responsibilities, best practices to reduce chlorine residue tank car NARs and available guidance and resources, such as additional CI guidance.

Edition 3, Revision 1 – January 2025

CST-VIDEO) CHLORINE SAFETY TOUR: A TRAINING GUIDE FOR CHLORINE EMERGENCY RESPONSE

This video is a training guide for chlorine emergency response. Presentation topics include: chlorine properties and emergency response; chlorine tank cars and rail safety; and the proper use of Emergency Kits A, B and C to mitigate leaks from chlorine cylinders, ton containers and tank car valves.

Edition 2 – July 2017

CTS-VIDEO) PREVENTING CHLOR-ALKALI RELEASES DURING CARGO TANK OPERATIONS

This video provides an overview of best practices to prevent releases during cargo tank shipments of certain CI mission chemicals, namely sodium hydroxide, potassium hydroxide, hydrochloric acid, and sodium hypochlorite. Viewers, including plant operators and drivers, will learn requirements for reporting hazmat transportation releases to DOT, review related DOT-reported cargo tank incident data, understand the sources and cause of common releases during cargo tank transport and operations, and learn best practices for preventing these types of releases.

Edition 1 – December 2020

C-VIDEO) HOW TO USE THE CHLORINE INSTITUTE EMERGENCY KIT "C" FOR CHLORINE TANK CARS AND TANK TRUCKS

This video provides guidance on troubleshooting chlorine leaks from tank cars and tank truck and instructions on how to apply the C-Kit.

Edition 4 – January 2014

FR-VIDEO) CHLORINE EMERGENCIES: AN OVERVIEW FOR FIRST RESPONDERS

This program was developed to help first responders prepare to act in those critical first 15 minutes of a chlorine emergency – what to do when the call comes in, what to expect on-scene, and where to find the resources needed to contain a release. This video provides a general overview of chlorine and covers specific topics such as: uses, chemical and physical properties, site safety plans, community awareness and public protective actions, personal protective equipment, response to exposures, transport, disposal options, leak mitigation, dispersion and ecological effects, and shelter-in-place considerations.

Edition 3 – 2019

HCLS-VIDEO) PREVENTING NON-ACCIDENT RELEASES BY PROPERLY SECURING HYDROCHLORIC ACID (HCL) RAILCARS

This video provides guidance for reducing non-accident releases (NARs) from tank car shipments of hydrochloric acid (HCl). Topics covered include the definition of an NAR, U.S. Department of Transportation incident reporting requirements, shipper responsibilities, best practices to reduce HCl tank car NARs and available guidance and resources, such as additional Chlorine Institute guidance.

Edition 2 – January 2025

HCS-VIDEO) HANDLING CAUSTIC SAFELY

Provides guidelines, recommended practices and other information for the safe handling, storage, loading and unloading of caustic soda tank cars and tank trucks. This video also includes caustic soda properties, reactivity, suitable materials of construction, and common uses.

Edition 1 – March 2020

H-VIDEO) FIRST RESPONSE TO CHLORINE EXPOSURES

First Response to Chlorine Exposures provides an overview of medical symptoms and treatment of chlorine exposure. The video is 12 minutes long.

Edition 2 – 2018

HYPO-VIDEO) HANDLING SODIUM HYPOCHLORITE SAFELY

Provides guidelines, recommended practices and other information for the safe handling, storage, loading and unloading of sodium hypochlorite tank cars and tank trucks. This video also includes sodium hypochlorite properties, health effects, reactivity, suitable materials of construction, and common uses. The video is 25 minutes long.

Edition 2 – 2015

PCS-VIDEO) POOL CHEMICAL SAFETY

This 13-minute online video details basic safe chemical handling techniques for pool operators. Topics include chemical safe handling, storage, and emergency/accident response.

Edition 2 – 2018

SAMP-VIDEO) BLEACH SAMPLING

The Chlorine Institute in partnership with NSF International, UL, and the Water Quality Association developed this training video that covers the following topics: pulling the sample; handling the sample; quenching the sample; and logging and shipping.

Edition 1 – June 2018

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W-VIDEO) CHLORINE SAFETY FOR WATER AND WASTEWATER OPERATIONS

Although produced with water and wastewater operators in mind, this video provides information about chlorine useful to everyone handling the chemical and especially for end users of cylinders and ton containers.

Edition 3 – 2016

### 3. WALL CHARTS

#### WC-1) HANDLING CHLORINE CYLINDERS AND TON CONTAINERS

Contains recommendations for safe handling of chlorine cylinders and ton containers, emergency procedures and applicable principles of first aid.

Edition 5 – January 2025

#### WC-2) HANDLING SODIUM HYPOCHLORITE

Designed to serve as general references for end users of sodium hypochlorite, this chart contains recommendations for safe handling of sodium hypochlorite, emergency procedures and applicable principles of first aid.

Edition 2 – September 2014

#### WC-3) HANDLING HYDROCHLORIC ACID

Contains recommendations for safe handling of hydrochloric acid, emergency procedures and applicable principles of first aid.

Edition 2 – January 2025

#### WC-4) HANDLING SODIUM AND POTASSIUM HYDROXIDE

Contains recommendations for safe handling of caustic soda and caustic potash, emergency procedures and applicable principles of first aid.

Edition 2 – March 2025

#### WC-6) PREVENTING ACCIDENTAL MIXING EVENTS (CARRIERS/DRIVERS)

Contains best practices for carrier management and drivers to implement in an effort to prevent accidental mixing events at delivery, as well as practices for reducing consequences such as PPE and ER actions.

Edition 1 – January 2025

#### WC-9) GUIDANCE FOR SCRAP RECYCLING FACILITIES HANDLING "ORPHANED" CHLORINE CONTAINERS

Contains guidance for container identification, initial actions, notifications, and resolution options for orphaned chlorine containers that arise at scrap recycling facilities.

Edition 1 – May 2025

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WC-10) GUIDANCE FOR FIRST RESPONDERS HANDLING "ORPHANED" CHLORINE CONTAINERS

Contains guidance for container identification, initial actions, notifications, and resolution options for first responders handling orphaned chlorine containers.

Edition 1 – May 2025

**4. INSTRUCTIONAL BOOKLETS****IB/A) EMERGENCY KIT "A" FOR 100-LB. AND 150-LB. CHLORINE CYLINDER**

Provides guidance on troubleshooting chlorine leaks from 100-lb and 150-lb cylinders and instructions on how to apply the A-Kit. Includes complete parts list for both generations.

Edition 13, Revision 1 – May 26, 2023

**IB/B) EMERGENCY KIT "B" FOR CHLORINE TON CONTAINERS**

Provides guidance on troubleshooting chlorine leaks from ton containers and instructions on how to apply the B-Kit. Includes complete parts list for both generations.

Edition 12, Revision 1 – May 26, 2023

**IB/C) EMERGENCY KIT "C" FOR CHLORINE TANK CARS AND TANK TRUCKS**

Provides guidance on troubleshooting chlorine leaks from tank cars and tank trucks and instructions on how to apply the C-Kit to traditional valves and dual valve systems. Includes complete parts list for both generations.

Edition 10, Revision 1 – January 2017

**IB/RV) CHLORINE INSTITUTE RECOVERY VESSEL (SALVAGE CYLINDER) FOR 100-LB. AND 150-LB. CHLORINE CYLINDERS**

Provides instructions and illustrates the use of Chlorine Institute Recovery Vessel. Includes complete parts list.

Edition 3 – September 2021

## 5. SPANISH PAMPHLETS

### FOLLETO 1) CLORO BÁSICO

Contiene información básica que incluye propiedades y efectos fisiológicos del cloro, descripción y reglas para el manejo de contenedores de cloro, medidas de emergencia y primeros auxilios, y características químicas y físicas.

Edición 8 – Mayo 2014

### FOLLETO 5) ALMACENAMIENTO A GRANEL DE CLORO LÍQUIDO

Este folleto ayuda en el diseño, la construcción, la ubicación, la instalación, y la inspección de los sistemas de almacenamiento de cloro líquido. Las recomendaciones se basan en el almacenamiento en tanques cilíndricos horizontales. Este folleto no se aplica a los equipos de presión en proceso de fabricación (por ejemplo, intercambiadores de calor o vaporizadores),

Edición 9 – Enero 2017

### FOLLETO 6) SISTEMAS DE TUBERÍAS PARA CLORO SECO

Esta publicación pretende proporcionar información útil relativa a las tuberías de cloro tanto para instalaciones permanentes de producción y uso, como para sistemas temporales de transporte. Se enumeran las tuberías, válvulas y accesorios adecuados para su uso con cloro seco en fase líquida o gaseosa, a temperaturas comprendidas entre - 150°F (-101°C) y 300°F (149°C).

Edición 17 – Abril 2020

### FOLLETO 9) SISTEMAS DE VAPORIZACIÓN DE CLORO

Este folleto está destinado a ayudar en la selección, diseño, operación segura y mantenimiento de sistemas de vaporización de cloro. Está limitado a aquellos que reciben cloro líquido en cilindros, contenedores de una tonelada, a través de tuberías, en tanques de carga o vagones cisterna y que vaporizarán el líquido para el uso final del cloro como gas. No está destinado a sistemas de procesamiento de cloro, como evaporadores y sistemas de distribución complejos.

Edición 9 – Abril 2024

### FOLLETO 17) DIRECTRICES DE SEGURIDAD Y OPERATIVAS PARA PLANTAS DE ENVASADO

El propósito de este folleto es proporcionar principalmente recomendaciones operativas e información de seguridad para los empleados en instalaciones que envasan cilindros de 100 lb (45 kg) y 150 lb (68 kg) y contenedores de una tonelada (907 kg) de cloro.

Edición 6 – Julio 2023

FOLLETO 49) PRÁCTICAS RECOMENDADAS PARA LA MANIPULACIÓN DEL CLORO A GRANEL EN EL TRANSPORTE POR CARRETERA

Este folleto proporciona directrices, prácticas recomendadas y otra información útil para el transporte, la recepción, las y los controles y la manipulación seguros de los camiones cisterna y las cisternas portátiles utilizados para el transporte de cloro por carretera.

Edición 11 – Junio 2022

FOLLETO 57) PARADA DE EMERGENCIA SISTEMA DE TRANSFERENCIA A GRANEL DE CLORO

Recomienda prácticas para protección de parada de emergencia durante las transferencias de cloro que involucran contenedores a granel.

Edición 7 – Noviembre 2020

FOLLETO 60) TUBERÍAS DE CLORO

Este folleto proporciona recomendaciones sobre el diseño, construcción, operación y mantenimiento de tuberías de acero al carbono que transportan cloro líquido o gaseoso. Las recomendaciones son aplicables a las tuberías que terminan fuera de la propiedad del transportista de cloro, o que atraviesan propiedades que no son propiedad del transportista o del receptor del cloro.

Edición 8 – Septiembre 2019

FOLLETO 63) PRIMEROS AUXILIOS, GESTIÓN MÉDICA/EVALUACIÓN MÉDICA Y PRÁCTICAS DE CONTROL DE HIGIENE OCUPACIONAL PARA EL CLORO

Esta décima edición incluye actualizaciones sobre la evaluación médica, la evaluación de la exposición al cloro y las prácticas de control de la higiene en el trabajo. La información contenida en este folleto tiene por objeto orientar a toda persona que produzca, utilice o manipule cloro.

Edición 10 – Enero 2023

FOLLETO 64) PLANES DE RESPUESTA A EMERGENCIAS PARA PLANTAS DE CLORO-ÁLCALI, HIPOCLORITO DE SODIO Y CLORURO DE HIDRÓGENO

Este folleto contiene información esencial para la preparación o actualización de una respuesta de emergencia formal y escrita que se utilizaría durante una liberación accidental o posible liberación accidental de productos cloro-álcalis.

Edición 8 – Enero 2020

FOLLETO 65) EQUIPO DE PROTECCIÓN PERSONAL PARA PRODUCTOS QUÍMICOS CLOROALCALINOS

Este folleto proporciona información relativa a determinados equipo de protección personals (incluido el equpo y la protección respiratoria) utilizado en la fabricación o manipulación de cloro, hidróxido de sodio y potasio (PPE), hipochlorito de sodio, ácido clorhídrico (muriático), ácido sulfúrico, cloruro de hidrógeno anhidro y monómero de cloruro de vinilo. Contiene recomendaciones del equipo de protección personal para la aperatura de línea, muestreo, carga, descarga, y respuesta de emergencia. También hay una discusión sobre los tipos comunes de respiradores.

Edición 7 – Enero 2021

FOLLETO 66) PRÁCTICAS RECOMENDADAS PARA EL MANEJO DE VAGONES CISTERNA DE CLORO

Este folleto proporciona directrices, prácticas recomendadas y otra información útil para el manejo seguro de vagones cisterna de cloro en instalaciones de carga y descarga. Esto incluye la recepción, posicionamiento, carga, descarga, mantenimiento rutinario, inspección, prueba y calificación de los tanques.

Edición 10 – Octubre 2022

FOLLETO 73) EQUIPOS DE MONITOREO ATMOSFÉRICO PARA CLORO

Este folleto está destinado a ayudar en la selección, instalación, mantenimiento, calibración y operación segura de los monitores fijos de cloro. Los monitores personales están fuera del alcance de este folleto.

Edición 9 – 2021

FOLLETO 74) GUÍA PARA ESTIMAR EL ÁREA AFECTADA POR UNA FUGA DE CLORO

El propósito de este folleto es proporcionar un documento simplificado para asistir a los productores y usuarios de cloro, comités locales de planificación ante emergencias, cuerpos de bomberos y municipios en la estimación del área afectada por una fuga de cloro, con fines de planificación de emergencias y evaluación de riesgos, así como brindar una comprensión general de lo que se espera en los escenarios de liberación de nubes de cloro. El Centro de Análisis de Seguridad Química (CSAC, por sus siglas en inglés) del Departamento de Seguridad Nacional (DHS, por sus siglas en inglés), que forma parte de la Dirección de Ciencia y Tecnología (SandT, por sus siglas en inglés), colaboró con el Instituto del Cloro para desarrollar una guía actualizada en esta versión del Folleto 74, basada en nuevas investigaciones experimentales sobre liberaciones de cloro y los fenómenos químicos y físicos asociados.

Edición 7 – Octubre 2019

FOLLETO 76) PAUTAS PARA EL TRANSPORTE VEHICULAR SEGURO DE CILINDROS DE CLORO Y CONTENEDORES DE UNA TONELADA

Proporciona pautas, prácticas recomendadas y otra información útil, incluida orientación sobre aseguramiento, segregación, capacitación de conductores, respuesta de emergencia y regulaciones para el envío de cilindros de cloro y contenedores de una tonelada en las carreteras.

Edición 6 – Septiembre 2018

FOLLETO 88) PRÁCTICAS RECOMENDADAS PARA LA MANIPULACIÓN DE SOLUCIÓN DE HIDRÓXIDO DE SODIO Y SOLUCIÓN DE HIDRÓXIDO DE POTASIO (CÁUSTICA) EN EL TRANSPORTE A GRANEL POR CARRETERA

Este folleto proporciona directrices, prácticas recomendadas y otra información útil para el transporte, la manipulación (incluida la carga y la descarga) y la recepción segura de la solución de hidróxido de sodio y la solución de hidróxido de potasio (denominadas colectivamente como cáusticas en este folleto) en los transportes por carretera a granel.

Edición 5 – Junio 2022

FOLLETO 91) LISTA DE VERIFICACIÓN PARA PLANTAS DE CLORO, DISTRIBUIDORES DE CLORO Y USUARIOS DE VAGONES CISTERNA DE CLORO

Este folleto tiene el formato de lista de comprobación y está diseñado principalmente para ser utilizado por los envasadores de cloro. Sin embargo, omitiendo las secciones irrelevantes, puede utilizarse como herramienta para que los distribuidores de cloro, los fabricantes de hipoclorito de sodio y los usuarios de camiones cisterna de cloro evalúen la parte de manipulación de cloro de sus procesos.

Edición 5 – Enero 2020

FOLLETO 121) PROPIEDADES EXPLOSIVAS DE MEZCLAS GASEOSAS QUE CONTIENEN HIDRÓGENO Y CLORO: ORIENTACIÓN OPERATIVA Y REFERENCIAS DE INVESTIGACIÓN

Este folleto está dividido en tres partes: Parte A: Reacciones del Cloro y el Hidrógeno: A Bibliografía. El objetivo de esta parte es reunir en una sola fuente todas las referencias pertinentes y publicadas que se conocen sobre las propiedades explosivas de las mezclas gaseosas que contienen hidrógeno y cloro. Parte B: Características de Reacción del Hidrógeno Mezclado con Cloro, Oxígeno y Gases Inertes. Esto se basa en la revisión de la literatura sobre las características de reacción del hidrógeno con el cloro y con mezclas de cloro y oxígeno. Parte C: Aplicación de los datos sobre las propiedades de la mezcla de hidrógeno/cloro. El objetivo de esta parte es proporcionar orientación sobre cómo aplicar en la práctica los conocimientos de los datos y la bibliografía presentados en las Partes A y B para operar con seguridad la licuefacción del cloro y otros procesos de cloro-álcali.

Edición 5, Revisión 1 – Enero 2025

FOLLETO 139) SEGURIDAD ELÉCTRICA EN LAS INSTALACIONES DE CELDAS DE CLORO-ÁLCALI

Este folleto tiene como objetivo proporcionar información sobre seguridad eléctrica para las personas responsables de las operaciones y el mantenimiento en instalaciones de celdas cloro-álcali.

Edición 7 – Julio 2024

FOLLETO 150) PRÁCTICAS RECOMENDADAS PARA LA MANIPULACIÓN DE ÁCIDO CLORHÍDRICO EN EL TRANSPORTE A GRANEL POR CARRETERA

Este folleto proporciona directrices, prácticas recomendadas y otra información útil para el envío, manipulación (incluyendo carga y descarga) y recepción seguros de ácido clorhídrico en transportes a granel por carretera.

Edición 4 – Marzo 2020

FOLLETO 152) MANEJO SEGURO DEL CLORO QUE CONTIENE TRICLORURO DE NITRÓGENO

Esta publicación tiene como objetivo proporcionar información útil a los productores, distribuidores, reenvasadores y usuarios de cloro. Aborda el tricloruro de nitrógeno, una impureza en trazas que se encuentra comúnmente en el cloro y que podría conducir a la descomposición explosiva del tricloruro de nitrógeno en sistemas que contienen cloro.

Edición 5 – Agosto 2024

FOLLETO 155) MANUAL DE CLORO PARA OPERADORES DE AGUA Y AGUAS RESIDUALES

Proporciona información básica sobre la seguridad y el manejo del cloro para el personal de las plantas de tratamiento y otros usuarios de cilindros o contenedores de toneladas.

Edición 4 – Junio 2023

FOLLETO 167) APRENDIENDO DE LA EXPERIENCIA

Este folleto pretende resumir los incidentes ocurridos en la producción de cloro, el envasado de cloro, la producción de hipoclorito sódico y las instalaciones de usuarios pertenecientes a la industria cloroalcalina que han sido facilitados al Instituto del Cloro (CI por sus siglas en inglés). No se incluyen incidentes relacionados con el tricloruro de nitrógeno.

Edición 4 – Abril 2020

FOLLETO 173) MANIPULACIÓN DE HIDRÓGENO EN INSTALACIONES DE CLORO-ÁLCALI

El objetivo principal de este documento es proporcionar un repositorio consolidado de los materiales del Instituto del Cloro relativos a los sistemas de hidrógeno que se encuentran en las instalaciones de producción de cloro-álcali. Otros productores, usuarios o manipuladores de hidrógeno gaseoso también pueden hacer uso de las orientaciones proporcionadas. Este documento ofrece orientación sobre el hidrógeno en estado gaseoso; la licuefacción y el hidrógeno licuado quedan fuera de su ámbito de aplicación.

Edición 1 – Septiembre 2021

**6. SPANISH VIDEOS**

AM-VIDEO-SPANISH) ACCIDENTAL MIXING

This video is designed to increase awareness about the risks of accidentally mixing sodium hypochlorite with other incompatible materials. The training video topics include: Basic Properties of Sodium Hypochlorite; Sodium Hypochlorite Reactions and Unintended Consequences; Two Case Studies (Atchison, Kansas and Kitchener, Ontario); Common Contributing Factors; and Safeguards for Drivers, Customers, and Suppliers; and additional resources.

Edición 1 – Junio 2018

FR-VIDEO-SPANISH) CHLORINE EMERGENCIES: AN OVERVIEW FOR FIRST RESPONDERS

This program was developed to help first responders prepare to act in those critical first 15 minutes of a chlorine emergency – what to do when the call comes in, what to expect on-scene, and where to find the resources needed to contain a release. This video provides a general overview of chlorine and covers specific topics such as: uses, chemical and physical properties, site safety plans, community awareness and public protective actions, personal protective equipment, response to exposures, transport, disposal options, leak mitigation, dispersion and ecological effects, and shelter-in-place considerations.

Edición 1 – 2021

H-VIDEO-SPANISH) PRIMERA RESPUESTA A LAS EXPOSICIONES PERSONALES AL CLORO

Este video contiene un resumen de los síntomas médicos y los tratamientos del contacto con cloro. El video dura 12 minutos.

Edición 2 – 2018

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JRCL2-VIDEO) VÍDEO-EN ESPAÑOL) JACK RABBIT: PROPIEDADES DE CLORO

Jack Rabbit: Propiedades de Cloro es un video que usa grabaciones del Proyecto del Departamento de Seguridad Nacional del gobierno estadounidense para mostrar las propiedades de dispersión. El video es 28 minutos y contiene estos temas:

- Introducción
- Dispersión
- Diferencias de Presión, Cambios de Fase y Consideraciones Térmicas
- Densidad
- Consideraciones Atmosféricas y Topográficas

Edición 1 – Julio 19

**7. SPANISH WALL CHARTS****WC-1 S) GRÁFICO MURAL EN ESPAÑOL**

Contains recommendations for safe handling of chlorine cylinders and ton containers, emergency procedures and applicable principles of first aid.

Edición 5 – Enero 2025

**WC-2 S) GRÁFICO MURAL EN ESPAÑOL**

Designed to serve as general references for end users of sodium hypochlorite, this chart contains recommendations for safe handling of sodium hypochlorite, emergency procedures and applicable principles of first aid.

Edición 2 – Septiembre 2014

**WC-3 S) GRÁFICO MURAL EN ESPAÑOL**

Contains recommendations for safe handling of hydrochloric acid, emergency procedures and applicable principles of first aid.

Edición 2 – Enero 2025

**WC-4 S) GRÁFICO MURAL EN ESPAÑOL**

Contains recommendations for safe handling of caustic soda and caustic potash, emergency procedures and applicable principles of first aid.

Edición 2 – Marzo 2025

**WC-6 S) GRÁFICO MURAL EN ESPAÑOL**

Contains best practices for carrier management and drivers to implement in an effort to prevent accidental mixing events at delivery, as well as practices for reducing consequences such as PPE and ER actions.

Edición 2 – Enero 2025

**WC-6-DG-S) GRÁFICO MURAL EN ESPAÑOL**

Contains best practices for drivers to implement in an effort to prevent accidental mixing events at delivery, as well as practices for reducing consequences such as PPE and ER actions.

Edición 1 – Marzo 2025

WC-9 S) GRÁFICO MURAL EN ESPAÑOL

Contains guidance for container identification, initial actions, notifications, and resolution options for orphaned chlorine containers that arise at scrap recycling facilities.

Edición 1 – Marzo 2025

WC-10 S) GRÁFICO MURAL EN ESPAÑOL

Contains guidance for container identification, initial actions, notifications, and resolution options for first responders handling orphaned chlorine containers.

Edición 1 – Mayo 2025

**8. SPANISH INSTRUCTIONAL BOOKLETS**IB/A) INSTITUTO DEL CLORO KIT DE EMERGENCIA "A" PARA CILINDROS DE CLORO DE 100-LB. AND 150-LB.

Este folleto de instrucciones proporciona información sobre el diseño y el uso del Kit de Emergencia "A" del Instituto del Cloro.

Edición 13, Revisión 1 – Mayo 2023

IB/B) INSTITUTO DEL CLORO KIT DE EMERGENCIA "B" PARA CONTENEDORES DE CLORO DE UNA TON

Este folleto de instrucciones proporciona información sobre el diseño y el uso del Kit de Emergencia "B" del Instituto del Cloro.

Edición 12, Revisión 2 – Mayo 2023

IB/C) INSTITUTO DEL CLORO KIT DE EMERGENCIA "C" PARA CONTENEDORES DE CLORO DE UNA TON

Este folleto de instrucciones proporciona información sobre el diseño y el uso del Kit de Emergencia "C" del Instituto del Cloro.

Edición 10, Revisión 1 – Enero 2018