NATIONAL CARGO BUREAU INC.

STUDENT MANUAL

OSHA 10-Hour Maritime Industry Course
Marine Terminals

SEAMIST
South East Area Maritime Industry Safety Training

NSU Florida

Student Manual – Table of Contents

OSHA 10-Hour Maritime Industry Course Class Agenda
Training Location: Remote

Day One	**Time**	**Training Hours**	**Trainer/Guest/ Other Outreach**
Welcome and Registrations	09:00 – 09:15 AM		
Introduction to OSHA	09:15 – 10:15 AM	**1.0**	Scott D. Brown
Walking and Working Surfaces	10:15 – 11:15 AM	**1.0**	Scott D. Brown
Break	11:15 – 11:30 AM		
Fall Protection	11:30 – 12:15 PM	**0.75**	Scott D. Brown
Opioid Awareness	12:15 – 12:30 PM	**0.25**	Scott D. Brown
Lunch Break	12:30 – 01:00 PM		
Hazardous Materials	01:00 – 02:00 PM	**1.0**	
Personal Protective Equipment	02:00 – 03:00 PM	**1.0**	Scott D. Brown
Day Two			
Complete Sign in Sheet	09:00 - 09:10 AM		
Material Handling	09:10 – 11:10 AM	**2.0**	Scott D. Brown
Break	11:10 – 11:20 AM		
Hazard Communications	11:20 – 12:20 PM	**1.0**	Scott D. Brown
Lunch Break	12:20 – 12:50 PM		
Fire Protection	12:50 – 01:50 PM	**1.0**	Scott D. Brown
Hot Work – Welding, Cutting and Burning	01:50 – 02:20 PM	**0.5**	Scott D. Brown
Electrical	02:20 – 02:50 PM	**0.5**	Scott D. Brown
Test	02:50 - 03:00 PM		

Primary Trainer: Scott D. Brown – OSHA Authorized Maritime Trainer #38-0030058
1425 S Jetties Ct
Mount Pleasant, SC 29466

Authorizing Training Organization: OTI Education Center at Volunteer State Community College, Gallatin, TN

Biography

Scott D. Brown
Chief, Marine Risk Engineering
National Cargo Bureau, Inc.

Scott Brown is Chief, Marine Risk Engineering at National Cargo Bureau, Inc; a not-for-profit marine surveying company whose mission is "Safety of Life and Cargo at Sea". Mr. Brown's role includes furthering the mission of the Bureau to better serve the marine insurance industry through the development and extension of services covering the supply chain "warehouse to warehouse". He is also responsible for promoting maritime worker safety through training and consultation.

Prior to rejoining NCB in 2018, Scott worked at AIG for 11 years in a variety of roles including Transportation Lead for the Client Risk Solutions Industry Services Group and Senior Vice President / Global Manager for the Marine Loss Prevention Team. His maritime career spans over 30 years and includes a prior stint with NCB in various surveying and management roles culminating in responsibility for the Bureau's surveying activity nationwide; time at sea serving as a merchant deck officer on a variety of general cargo, container, LASH and tanker vessels; as well as service in the US Navy as a Naval Flight Officer aboard P3C-Orion anti-submarine warfare aircraft.

Mr. Brown's background in maritime worker safety includes the development, execution and support for a wide number and variety of risk assessments encompassing compliance with industry safety standards carried out at marine terminals and shipyards worldwide. He is currently an affiliate instructor for the Georgia Tech – Savannah OSHA Training Institute Education Center where he is approved to teach the OSHA 5410 "Safety and Health Standards for the Maritime Industry" Course. He is also an OSHA authorized trainer for Maritime Outreach Courses through the Volunteer State Community College OTIEC.

Mr. Brown possesses a B.S. degree in Marine Transportation from the US Merchant Marine Academy at Kings Point, NY; and a Post Graduate degree in Marine Insurance from the World Maritime University in Malmo, Sweden.

Mr. Brown has played an active role with industry groups over his career including Transported Assets Protection Association (TAPA) Americas, where he served as a board member for several years; and the American Institute of Marine Underwriters where he currently serves on the Cargo Loss Prevention Committee. He has also served on various US Coast Guard Advisory Committees including the Area Maritime Security Committee for the Port of NY / NJ and the Chemical Transportation Advisory Committee during which time he chaired the solid bulk cargo subcommittee and the Marpol V working group.

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Occupational Safety
and Health Administration

38-0030058

Maritime Safety and Health

This card acknowledges that the recipient has successfully completed the required training to be designated as an

OSHA Authorized Maritime Trainer

Scott David Brown

Completion of this course authorizes the trainer to conduct 10- and 30-hour Maritime Industry courses in accordance with Outreach Training Program requirements.

Deputy Director, Directorate of Training and Education

06/27/2023
Expiration Date

Volunteer State Community College

An Authorized OSHA Training Institute Education Center

615-230-3358
www.volstate.edu/osha

This card identifies the bearer as an authorized Outreach trainer, authorized to conduct outreach courses in accordance with OSHA's Outreach Training Program Requirements. The card is not a verification of the bearer's skills, knowledge, or abilities.

Use or distribution of this card for fraudulent purposes, including false claims of having received training, may result in prosecution under 18 U.S.C. 1001. Potential penalties include substantial criminal fines, imprisonment up to 5 years, or both.

For OSHA Outreach Training program go to "Training" at www.osha.gov

Rev. 1/2016

U.S. Department of Labor

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Occupational Safety and Health Administration

Job Safety and Health
IT'S THE LAW!

All workers have the right to:

- A safe workplace.
- Raise a safety or health concern with your employer or OSHA, or report a work-related injury or illness, without being retaliated against.
- Receive information and training on job hazards, including all hazardous substances in your workplace.
- Request an OSHA inspection of your workplace if you believe there are unsafe or unhealthy conditions. OSHA will keep your name confidential. You have the right to have a representative contact OSHA on your behalf.
- Participate (or have your representative participate) in an OSHA inspection and speak in private to the inspector.
- File a complaint with OSHA within 30 days (by phone, online or by mail) if you have been retaliated against for using your rights.
- See any OSHA citations issued to your employer.
- Request copies of your medical records, tests that measure hazards in the workplace, and the workplace injury and illness log.

This poster is available free from OSHA.

Employers must:

- Provide employees a workplace free from recognized hazards. It is illegal to retaliate against an employee for using any of their rights under the law, including raising a health and safety concern with you or with OSHA, or reporting a work-related injury or illness.
- Comply with all applicable OSHA standards.
- Report to OSHA all work-related fatalities within 8 hours, and all inpatient hospitalizations, amputations and losses of an eye within 24 hours.
- Provide required training to all workers in a language and vocabulary they can understand.
- Prominently display this poster in the workplace.
- Post OSHA citations at or near the place of the alleged violations.

FREE ASSISTANCE to identify and correct hazards is available to small and medium-sized employers, without citation or penalty, through OSHA-supported consultation programs in every state.

Contact OSHA. We can help.

1-800-321-OSHA (6742) • TTY 1-877-889-5627 • www.osha.gov

OSHA 3165-04R 2015

HANDOUT #2

Employers Must Provide and Pay for PPE

Personal Protective Equipment (PPE)

The Occupational Safety and Health Administration (OSHA) requires that employers protect you from workplace hazards that can cause injury or illness. Controlling a hazard at its source is the best way to protect workers. However, when engineering, work practice and administrative controls are not feasible or do not provide sufficient protection, employers must provide personal protective equipment (PPE) to you and ensure its use.

PPE is equipment worn to minimize exposure to a variety of hazards. Examples include items such as gloves, foot and eye protection, protective hearing protection (earplugs, muffs), hard hats and respirators.

Employer Obligations	Workers should:
✓ Performing a "hazard assessment" of the workplace to identify and control physical and health hazards. ✓ Identifying and providing appropriate PPE for employees. ✓ Training employees in the use and care of the PPE. ✓ Maintaining PPE, including replacing worn or damaged PPE. ✓ Periodically reviewing, updating and evaluating the effectiveness of the PPE program.	✓ Properly wear PPE ✓ Attend training sessions on PPE ✓ Care for, clean and maintain PPE, and ✓ Inform a supervisor of the need to repair or replace PPE.

Employers Must Pay for Personal Protective Equipment (PPE)

On May 15, 2008, a new OSHA rule about employer payment for PPE went into effect. With few exceptions, OSHA now requires employers to pay for personal protective equipment used to comply with OSHA standards. The final rule does not create new requirements regarding what PPE employers must provide.

The standard makes clear that employers cannot require workers to provide their own PPE and the worker's use of PPE they already own must be completely voluntary. Even when a worker provides his or her own PPE, the employer must ensure that the equipment is adequate to protect the worker from hazards at the workplace.

Examples of PPE that Employers Must Pay for Include:

- Metatarsal foot protection
- Rubber boots with steel toes
- Non-prescription eye protection
- Prescription eyewear inserts/lenses for full face respirators
- Goggles and face shields
- Fire fighting PPE (helmet, gloves, boots, proximity suits, full gear)
- Hard hats
- Hearing protection
- Welding PPE

HANDOUT #2

Employers Must Provide and Pay for PPE

Payment Exceptions under the OSHA Rule

Employers are not required to pay for some PPE in certain circumstances:

- Non-specialty safety-toe protective footwear (including steel-toe shoes or boots) and non-specialty prescription safety eyewear provided that the employer permits such items to be worn off the job site. (OSHA based this decision on the fact that this type of equipment is very personal, is often used outside the workplace, and that it is taken by workers from jobsite to jobsite and employer to employer.)
- Everyday clothing, such as long-sleeve shirts, long pants, street shoes, and normal work boots.
- Ordinary clothing, skin creams, or other items, used solely for protection from weather, such as winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, ordinary sunglasses, and sunscreen
- Items such as hair nets and gloves worn by food workers for consumer safety.
- Lifting belts because their value in protecting the back is questionable.
- When the employee has lost or intentionally damaged the PPE and it must be replaced.

OSHA Standards that Apply

OSHA General Industry PPE Standards

- 1910.132: General requirements and payment
- 1910.133: Eye and face protection
- 1910.134: Respiratory protection
- 1910.135: Head protection
- 1910.136: Foot protection
- 1910.137: Electrical protective devices
- 1910.138: Hand protection

OSHA Construction PPE Standards

- 1926.28: Personal protective equipment
- 1926.95: Criteria for personal protective equipment
- 1926.96: Occupational foot protection
- 1926.100: Head protection
- 1926.101: Hearing protection
- 1926.102: Eye and face protection
- 1926.103: Respiratory protection

There are also PPE requirements in shipyards and marine terminals and many standards on specific hazards, such as 1910.1030: Bloodborne pathogens and 1910.146: Permit-required confined spaces.

OSHA standards are online at www.osha.gov.

Sources:

- *Employers Must Provide and Pay for PPE, New Jersey Work Environment Council (WEC) Fact Sheet*
- *OSHA Standards, 1910.132(h) and 1926.95(d)*
- *Employer Payment for Personal Protective Equipment Final Rule, Federal Register: November 15, 2007 (Volume 72, Number 220*

OSHA® FactSheet

Your Rights as a Whistleblower

You may file a complaint with OSHA if your employer retaliates against you by taking unfavorable personnel action because you engaged in protected activity relating to workplace safety or health, asbestos in schools, cargo containers, airline, commercial motor carrier, consumer product, environmental, financial reform, food safety, health insurance reform, motor vehicle safety, nuclear, pipeline, public transportation agency, railroad, maritime, and securities laws.

Whistleblower Laws Enforced by OSHA

Each law requires that complaints be filed within a certain number of days after the alleged retaliation.

- *Asbestos Hazard Emergency Response Act* (90 days)
- *Clean Air Act* (30 days)
- *Comprehensive Environmental Response, Compensation and Liability Act* (30 days)
- *Consumer Financial Protection Act of 2010* (180 days)
- *Consumer Product Safety Improvement Act* (180 days)
- *Energy Reorganization Act* (180 days)
- *Federal Railroad Safety Act* (180 days)
- *Federal Water Pollution Control Act* (30 days)
- *International Safe Container Act* (60 days)
- *Moving Ahead for Progress in the 21st Century Act* (motor vehicle safety) (180 days)
- *National Transit Systems Security Act* (180 days)
- *Occupational Safety and Health Act* (30 days)
- *Pipeline Safety Improvement Act* (180 days)
- *Safe Drinking Water Act* (30 days)
- *Sarbanes-Oxley Act* (180 days)
- *Seaman's Protection Act* (180 days)
- *Section 402 of the FDA Food Safety Modernization Act* (180 days)
- *Section 1558 of the Affordable Care Act* (180 days)
- *Solid Waste Disposal Act* (30 days)
- *Surface Transportation Assistance Act* (180 days)
- *Toxic Substances Control Act* (30 days)
- *Wendell H. Ford Aviation Investment and Reform Act for the 21st Century* (90 days)

Unfavorable Personnel Actions

Your employer may be found to have retaliated against you if your protected activity was a contributing or motivating factor in its decision to take unfavorable personnel action against you. Such actions may include:

- Applying or issuing a policy which provides for an unfavorable personnel action due to activity protected by a whistleblower law enforced by OSHA
- Blacklisting
- Demoting
- Denying overtime or promotion
- Disciplining
- Denying benefits
- Failing to hire or rehire
- Firing or laying off
- Intimidation
- Making threats
- Reassignment to a less desirable position, including one adversely affecting prospects for promotion
- Reducing pay or hours
- Suspension

Filing a Complaint

If you believe that your employer retaliated against you because you exercised your legal rights as an employee, contact OSHA as soon as possible because you must file your complaint within the legal time limits.

An employee can file a complaint with OSHA by visiting or calling the local OSHA office or sending a written complaint to the closest OSHA regional or area office. Written complaints may be filed by facsimile, electronic communication, hand delivery during business hours, U.S. mail (confirmation services recommended), or other third-party commercial carrier. The date of the postmark, facsimile, electronic communication, telephone call, hand delivery, delivery to a third-party commercial carrier, or in-person filing at an OSHA

office is considered the date filed. No particular form is required and complaints may be submitted in any language.

For OSHA area office contact information, please call 1-800-321-OSHA (6742) or visit www.osha.gov/html/RAmap.html.

Upon receipt of a complaint, OSHA will first review it to determine whether it is valid on its face. All complaints are investigated in accord with the statutory requirements.

With the exception of employees of the U.S. Postal Service, public sector employees (those employed as municipal, county, state, territorial or federal workers) are not covered by the *Occupational Safety and Health Act* (OSH Act). Non-federal public sector employees and, except in Connecticut, New York, New Jersey, the Virgin Islands, and Illinois, private sector employees are covered in states which operate their own occupational safety and health programs approved by Federal OSHA. For information on the 27 State Plan states, call 1-800-321-OSHA (6742), or visit www.osha.gov/dcsp/osp/index.html.

A federal employee who wishes to file a complaint alleging retaliation due to disclosure of a substantial and specific danger to public health or safety or involving occupational safety or health should contact the Office of Special Counsel (www.osc.gov) and OSHA's Office of Federal Agency Programs (www.osha.gov/dep/enforcement/dep_offices.html).

Coverage of public sector employees under the other statutes administered by OSHA varies by statute. If you are a public sector employee and you are unsure whether you are covered under a whistleblower protection statute, call 1-800-321-OSHA (6742) for assistance, or visit www.whistleblowers.gov.

How OSHA Determines Whether Retaliation Took Place

The investigation must reveal that:

- The employee engaged in protected activity;
- The employer knew about or suspected the protected activity;
- The employer took an adverse action; and
- The protected activity motivated or contributed to the adverse action.

If the evidence supports the employee's allegation and a settlement cannot be reached, OSHA will generally issue an order, which the employer may contest, requiring the employer to reinstate the employee, pay back wages, restore benefits, and other possible remedies to make the employee whole. Under some of the statutes the employer must comply with the reinstatement order immediately. In cases under the *Occupational Safety and Health Act*, *Asbestos Hazard Emergency Response Act*, and the *International Safe Container Act*, the Secretary of Labor will file suit in federal district court to obtain relief.

Partial List of Whistleblower Protections

Whistleblower Protections under the OSH Act

The OSH Act protects workers who complain to their employer, OSHA or other government agencies about unsafe or unhealthful working conditions in the workplace or environmental problems. You cannot be transferred, denied a raise, have your hours reduced, be fired, or punished in any other way because you used any right given to you under the OSH Act. Help is available from OSHA for whistleblowers.

If you have been punished or discriminated against for using your rights, you must file a complaint with OSHA within 30 days of the alleged reprisal for most complaints. No form is required, but you must send a letter or call the OSHA Area Office nearest you to report the discrimination (within 30 days of the alleged discrimination).

You have a limited right under the OSH Act to refuse to do a job because conditions are hazardous. You may do so under the OSH Act only when (1) you believe that you face death or serious injury (and the situation is so clearly hazardous that any reasonable person would believe the same thing); (2) you have tried, where possible, to get your employer to correct the condition, and been unable to obtain a correction and there is no other way to do the job safely; and (3) the situation is so urgent that you do not have time to eliminate the hazard through regulatory channels such as calling OSHA. For details, see www.osha.gov/as/opa/worker/refuse.html. OSHA cannot enforce union contracts or state laws that give employees the right to refuse to work.

Whistleblower Protections in the Transportation Industry

Employees whose jobs directly affect commercial motor vehicle safety or security are protected from retaliation by their employers for, among other things, reporting violations of federal or state commercial motor carrier safety or security regulations, or refusing to operate a vehicle because of violations of federal commercial motor vehicle safety or security regulations or because they have a reasonable apprehension of death or serious injury to themselves or the public and they have sought from the employer and been unable to obtain correction of the hazardous condition.

Similarly, employees of air carriers, their contractors or subcontractors who raise safety concerns or report violations of FAA rules and regulations are protected from retaliation, as are employees of owners and operators of pipelines, their contractors and subcontractors who report violations of pipeline safety rules and regulations. Employees involved in international shipping who report unsafe shipping containers are also protected. In addition, employees of railroad carriers or public transportation agencies, their contractors or subcontractors who report safety or security conditions or violations of federal rules and regulations relating to railroad or public transportation safety or security are protected from retaliation.

Whistleblower Protections for Voicing Environmental Concerns

A number of laws protect employees from retaliation because they report violations of environmental laws related to drinking water and water pollution, toxic substances, solid waste disposal, air quality and air pollution, asbestos in schools, and hazardous waste disposal sites. The *Energy Reorganization Act* protects employees from retaliation for raising safety concerns in the nuclear power industry and in nuclear medicine.

Whistleblower Protections When Reporting Corporate Fraud

Employees who work for publicly traded companies or companies required to file certain reports with the Securities and Exchange Commission are protected from retaliation for reporting alleged mail, wire, bank or securities fraud; violations of SEC rules or regulations of the SEC; or violations of federal laws relating to fraud against shareholders.

Whistleblower Protections for Voicing Consumer Product Concerns

Employees of consumer product manufacturers, importers, distributors, retailers, and private labelers are protected from retaliation for reporting reasonably perceived violations of any statute or regulation within the jurisdiction of the Consumer Product Safety Commission.

More Information

To obtain more information on whistleblower laws, go to www.whistleblowers.gov.

This is one of a series of informational fact sheets highlighting OSHA programs, policies, or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards and regulations, refer to Title 29 of the Code of Federal Regulations. Because some of these whistleblower laws have only recently been enacted, the final regulations implementing them may not yet be available in the Code of Federal Regulations but the laws are still being enforced by OSHA. This information will be made available to sensory-impaired individuals upon request. Voice phone number: (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

DWP FS-3638 04/2013

We Are OSHA


We Can Help

Workers' rights under the OSH Act

Workers are entitled to working conditions that do not pose a risk of serious harm. To help assure a safe and healthful workplace, OSHA also provides workers with the right to:

- **Ask OSHA to inspect their workplace;**
- **Use their rights under the law without retaliation;**
- **Receive information and training about hazards, methods to prevent harm, and the OSHA standards that apply to their workplace. The training must be in a language you can understand;**
- **Get copies of test results done to find hazards in the workplace;**
- **Review records of work-related injuries and illnesses; and**
- **Get copies of their medical records.**

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Occupational Safety and Health Administration
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Who OSHA covers

Private sector workers

Most employees in the nation come under OSHA's jurisdiction. OSHA covers private sector employers and employees in all 50 states, the District of Columbia, and other U.S. jurisdictions either directly through Federal OSHA or through an OSHA-approved state program. State-run health and safety programs must be at least as effective as the Federal OSHA program. To find the contact information for the OSHA Federal or State Program office nearest you, call 1-800-321-OSHA (6742) or go to www.osha.gov.

State and local government workers

Employees who work for state and local governments are not covered by Federal OSHA, but have OSH Act protections if they work in those states that have an OSHA-approved state program. The following 22 states or territories have OSHA-approved programs:

Alaska	Arizona	California
Hawaii	Indiana	Iowa
Kentucky	Maryland	Michigan
Minnesota	Nevada	New Mexico
North Carolina	Oregon	South Carolina
Tennessee	Utah	Vermont
Virginia	Washington	Wyoming
Puerto Rico		

Five additional states and one U.S. territory have OSHA-approved plans that cover public sector workers only:

Connecticut	Illinois	Maine
New Jersey	New York	Virgin Islands

Private sector workers in these five states and the Virgin Islands are covered by Federal OSHA.

Federal government workers

Federal agencies must have a safety and health program that meets the same standards as private employers. Although OSHA does not fine federal agencies, it does monitor federal agencies and responds to workers' complaints. The United States Postal Service (USPS) is covered by OSHA.

Not covered under the OSH Act:

- Self-employed;
- Immediate family members of farm employers who do not employ outside employees;
- Workplace hazards regulated by another federal agency (for example, the Mine Safety and Health Administration, the Department of Energy, or Coast Guard).

OSHA standards: Protection on the job

OSHA standards are rules that describe the methods that employers must use to protect their employees from hazards. There are OSHA standards for Construction work, Agriculture, Maritime operations, and General Industry, which are the standards that apply to most worksites. These standards limit the amount of hazardous chemicals workers can be exposed to, require the use of certain safe practices and equipment, and require employers to monitor hazards and keep records of workplace injuries and illnesses.

Examples of OSHA standards include requirements to provide fall protection, prevent trenching cave-ins, prevent some infectious diseases, assure that workers safely enter confined spaces, prevent exposure to harmful substances like asbestos, put guards on machines, provide respirators or other safety equipment, and provide training for certain dangerous jobs.

Employers must also comply with the General Duty Clause of the OSH Act, which *requires employers to keep their workplace free of serious recognized hazards*. This clause is generally cited when no OSHA standard applies to the hazard.

Workers can ask OSHA to inspect their workplace

Workers, or their representatives, may file a complaint and ask OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA standards. A worker can tell OSHA not to let their employer know who filed the complaint. **It is a violation of the OSH Act for an employer to fire, demote, transfer or retaliate in any way against a worker for filing a complaint or using other OSHA rights.**

Written complaints that are signed by a worker or their representative and submitted to the closest OSHA office are more likely to result in an on-site OSHA inspection. You can call 1-800-321-OSHA (6742) to request a complaint form from your local OSHA office or visit www.osha.gov/pls/osha7/eComplaintForm.html to submit

the form online. Completed forms can also be faxed or mailed to the local OSHA office. Most complaints sent in online may be resolved informally over the phone with your employer.

When the OSHA inspector arrives, workers and their representatives have the right to:

- Go along on the inspection;
- Talk privately with the OSHA inspector; and
- Take part in meetings with the inspector and the employer before and after the inspection is conducted.

Where there is no union or employee representative, the OSHA inspector must talk confidentially with a reasonable number of workers during the course of the investigation.

When an inspector finds violations of OSHA standards or serious hazards, OSHA may issue citations and fines. A citation includes the methods an employer may use to fix a problem and the date by when the corrective actions must be completed. Workers only have the right to challenge the deadline for when a problem must be resolved. Employers, on the other hand, have the right to contest whether there is a violation or any other part of the citation. Workers or their representatives must notify OSHA that they want to be involved in the appeals process if the employer challenges a citation.

If you send in a complaint requesting an OSHA inspection, you have the right to find out the results of the OSHA inspection and request a review if OSHA does not issue citations.

Employer responsibilities

Employers have the responsibility to provide a safe workplace. **Employers MUST provide their employees with a workplace that does not have serious hazards and must follow all OSHA safety and health standards.** Employers must find and correct safety and health problems. OSHA further requires employers to try to eliminate or reduce hazards first by making changes in working conditions rather than just relying on masks, gloves, earplugs or other types of personal protective equipment. Switching to safer chemicals, implementing processes to trap harmful fumes, or using ventilation systems to clean the air are examples of effective ways to get rid of or minimize risks.

Employers **MUST** also:

- Prominently display the official OSHA *Job Safety and Health – It's the Law* poster that describes rights and responsibilities under the OSH Act. **This poster is free and can be downloaded from www.osha.gov**.
- Inform workers about chemical hazards through training, labels, alarms, color-coded systems, chemical information sheets and other methods.
- Provide safety training to workers in a language and vocabulary they can understand.
- Keep accurate records of work-related injuries and illnesses.
- Perform tests in the workplace, such as air sampling, required by some OSHA standards.
- Provide required personal protective equipment at no cost to workers.*
- Provide hearing exams or other medical tests required by OSHA standards.



- Post OSHA citations and injury and illness data where workers can see them.
- Notify OSHA within 8 hours of a workplace fatality or within 24 hours of any work-related inpatient hospitalization, amputation or loss of an eye (1-800-321-OSHA [6742]).
- Not retaliate against workers for using their rights under the law, including their right to report a work-related injury or illness.

* Employers must pay for most types of required personal protective equipment.

The law protects workers from retaliation when using their OSHA rights

The OSH Act protects workers who complain to their employer, OSHA or other government agencies about unsafe or unhealthful working conditions in the workplace or environmental problems. You cannot be transferred, denied a raise, have your hours reduced, be fired, or punished in any other way because you used any right given to you under the OSH Act. Help is available from OSHA for whistleblowers.

If you have been punished or retaliated against for using your rights, you must file a complaint with OSHA **within 30 days** from the date the retaliatory decision was both made and communicated to you. No form is needed, but you must call OSHA within 30 days of the alleged retaliation at 1-800-321-OSHA (6742) and ask to speak to the OSHA area office nearest you to report the retaliation.

You have the right to a safe workplace

The *Occupational Safety and Health Act of 1970* (OSH Act) was passed to prevent workers from being killed or seriously harmed at work. The law requires that employers provide their employees with working conditions that are free of known dangers. The Act created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training and assistance to workers and employers. Workers may file a complaint to have OSHA inspect their workplace if they believe that their employer is not following OSHA standards or there are serious hazards.

Contact us if you have questions or want to file a complaint. We will keep your information confidential. We are here to help you. Call our toll-free number at 1-800-321-OSHA (6742) or go to www.osha.gov.

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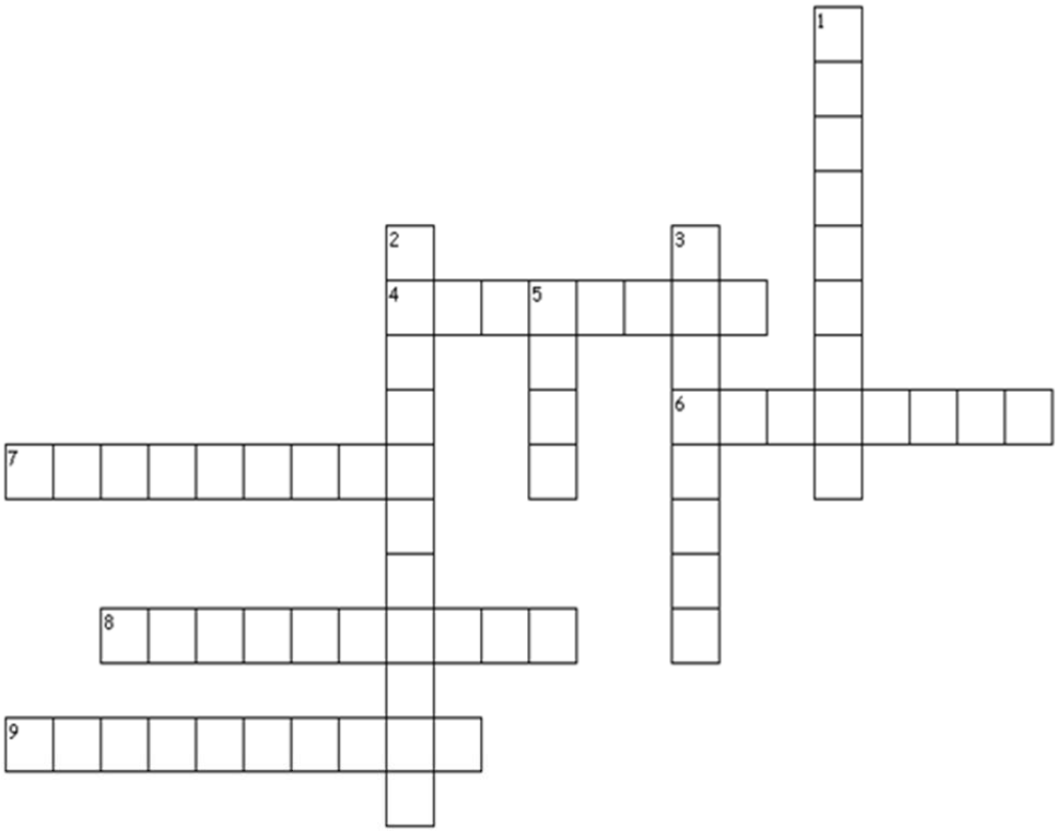
Occupational Safety and Health Administration

U.S. Department of Labor

1-800-321-OSHA (6742) TTY 1-877-889-5627
www.osha.gov

OSHA 3334-09R 2015

Topic 4: Workers Rights Practice Worksheet
Crossword Puzzle



OSHA Provides Workers the Right to:

Across

4. Hazard _____ and medical records
6. Information about _____ and illnesses in your workplace
7. A safe and _____ workplace
8. Complain or request hazard _____ from employer
9. Participate in an OSHA _____

Down

1. Know about _____ conditions
2. Be free from _____ for exercising safety and health rights
3. _____ as provided in the OSHA standards
5. File a complaint with _____

OSHA® FactSheet

Work Safety Zones for On-Dock Container Rail Operations in Marine Terminals

An increasing number of marine cargo-handling facilities have workers loading intermodal containers onto specialized railcars. Employers with on-dock rail facilities should develop a terminal-specific rail safety plan and establish work safety zones to protect all workers.

Working in this environment requires the full attention of all workers (those on foot and equipment/vehicle operators), and leaves no room for any distractions. Working close to rail lines exposes workers to struck-by hazards from mobile equipment and vehicles such as top/side handlers, reach stackers, rail-mounted gantry cranes (RMGs), rubber-tired gantry cranes (RTGs), straddle carriers, semi-tractors, and pickup trucks. Workers are also at risk of being struck by railcars.

Establishing a Safe Work Zone for Workers

Employers can ensure a safe work environment for longshore and other workers performing on-dock rail operations by establishing a safe work zone (or buffer zone) between the on-dock rail operations and mobile equipment and vehicles operating near active rail operations. At a minimum, the personnel safety zone should include the following:

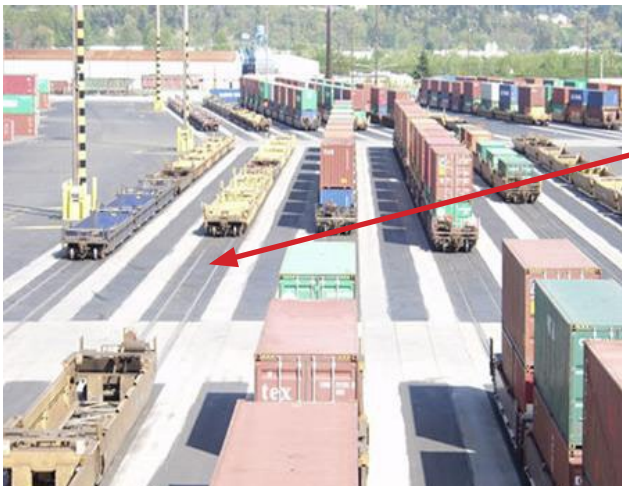
- Sufficient width to allow workers to walk safely around all mobile equipment and moving vehicles without stepping into oncoming traffic, and permit equipment operators to work without endangering on-dock workers;
- Safety zone lines marked with reflective paint or other highly visible markings under all working conditions, including at night and in inclement weather;
- Stationary vehicles (ensure that stationary vehicle is not able to be driven away until the container rail operation is completed), safety cones or flares placed as barriers to cordon off the safety zone;
- A flagperson to direct mobile equipment and moving vehicles; and

- Speed limits for mobile equipment and moving vehicles in traffic lanes passing close to active rail operations.

Training and Safe Work Methods

- Supervisors should hold "safety talks" with on-dock workers at the beginning of each shift. The talk should cover the layout of the yard, expected rail activity, and individual equipment/vehicle operators' responsibility for controlling speed and maintaining a safe distance from on-dock rail operations.
- Employers must establish all necessary controls during railcar movement to safeguard personnel, 29 CFR 1917.17(g) – Railroad Facilities.
- Employers should suspend all on-dock rail operations during unscheduled rail movement and notify affected workers.
- Employers should implement written procedures for notifying personnel of all scheduled and unscheduled rail movement.

- Employers must ensure that workers know and follow all OSHA vehicle requirements, e.g., 29 CFR 1917.43 – Powered Industrial Trucks, 1917.44 – General Rules Applicable to Vehicles, and 1910.178(l) – Powered Industrial Trucks – Operator Training.
- Employers must determine that workers are competent before they are permitted to operate vehicles and equipment in marine terminals, 29 CFR 1917.27(a) – Personnel – Qualifications of Machinery Operators.
- Employers must ensure that all workers correctly wear the required personal protective equipment (PPE) as specified in 29 CFR 1917 Subpart E – Personal Protection.
- All workers (those on foot and equipment/ vehicle operators) should be made aware of the established traffic patterns and speed limits.
- All workers (those on foot and equipment/ vehicle operators) shall wear high-visibility vests or equivalent protection, 29 CFR 1917.71(e) – Terminals Handling Intermodal Containers or Roll-on Roll-off Operations.



View of an on-dock rail terminal.

Remember:

- On-dock rail operations are very dangerous. The employer is required to protect all workers.
- Workers should not be distracted during on-dock rail operations. Distractions can come from electronic devices (such as cell phones, MP3 players, and radios), or from coworkers.
- Employers and workers should maintain a strong focus on safety.

Note: States with OSHA-approved state plans may have different requirements. See www.osha.gov for more information.

Photos courtesy of the National Maritime Safety Association.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

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DSG FS-3711 05/2014

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Top/Side Handler Safety in Marine Terminals

Workers in the marine cargo-handling industry are at risk of being struck by top/side handlers when working in marine terminals. Always be aware of traffic patterns and moving vehicles to avoid collisions and injuries.

Photo: Peter McDonough, LaGrangeville, NY

Ways to Avoid Traffic Incidents

All drivers:

- Always use caution when approaching a gap in a stack or bay. A top/side handler may be in operation, and could back into the travel lane. You may not see this equipment until it emerges from the stack and is ready to cross transit lanes.
- Yield the right of way to top/side handlers that are backing up and provide a wide berth to them, or stop and allow them to back across the travel lane.
- Obey all speed and traffic regulations (29 CFR 1917.44(d)) and ensure that all installed safety devices, such as horns, seat belts, back-up alarms, flashing lights, and mirrors, are operational (29 CFR 1917.43(c)(5)).

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OSHA 3621-04 2013

- Be aware of pedestrians in your area, and maintain eye or voice contact with them if possible. Keep spotters and clerks in view.
- Maintain a distance of at least 20 feet between the first two vehicles in check-in, checkout, roadability, or loading/discharging lines, and any time employees might work behind other vehicles in line (29 CFR 1917.44(i)).
- Always be prepared to STOP!

Top/side handler operators:

- Back up slowly and smoothly out of the stacks, and do not cut across, between, or through bays.
- Ensure that the container being handled does not strike other containers in the stack.

Top handler removing container from utility truck.

Workers on foot:

- Never step out from a stack into vehicular traffic.
- Stay out of designated traffic lanes.
- Always maintain eye and voice contact with equipment operators to ensure that they know your location.

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Mechanics Working in "the Yard" during Marine Terminal Operations

Employers must ensure the safety of workers. Mechanics working in "the yard" on containers, reefers, and chassis in marine cargo terminals are exposed to various work-related injuries or death. To prevent injury to workers while working in the yard, employers should provide tool box safety talks each day to ensure that workers are aware of all hazards in the yard.

Safe work practices should include:

- **Mechanics** working away from the shop area should maintain constant radio communication with their immediate supervisor to advise the supervisor of their location. Supervisors should regularly communicate with workers performing duties away from the shop area and ensure that workers are aware of all hazards in the yard.
- **Employers** should properly train workers in all aspects of the work.
- **Mechanics** should create a safety zone/barrier around the container, reefer, or chassis by using a mechanic's truck and cones and/or signs to alert vehicle operators that a mechanic is working in the area. The safety zone should also prevent movement or bumping of the container, reefer, or chassis, which could injure the mechanic.
- **Vehicle operators** should not hook up to equipment until they are absolutely sure that mechanics are no longer in the safety zone and/or working on equipment.

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OSHA 3561-07 2012

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- **Mechanics** pre-tripping reefer units should prevent drivers from aligning tractors with the reefer until the mechanics complete all equipment checks and stow the reefer cord (as appropriate). This process involves having the vehicle operators park perpendicular to the chassis until the mechanics indicate that the reefer is ready and it is safe to start the hook up.

- **Mechanics** working in the terminal area must wear the necessary clothing, including high-visibility clothing (i.e., a reflective vest) (see §1917.95(a)).

- **Mechanics** performing arc welding must wear filter lenses to protect themselves from the arc (see §1917.152(e)(8)(ii)).

High-visibility vest.

Remember

- Create a safety zone around the container, reefer, or chassis while working on it;
- Never step between mobile equipment lined up to a chassis and the chassis itself;
- Make certain that vehicle wheels are chocked to prevent movement;
- Alert coworkers of approaching equipment; and
- Immediately report to a supervisor any mobile equipment operators who deviate from established terminal safety rules.

For more information:

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Six Ways to Stay Safe When Working on Cranes in Marine Terminals

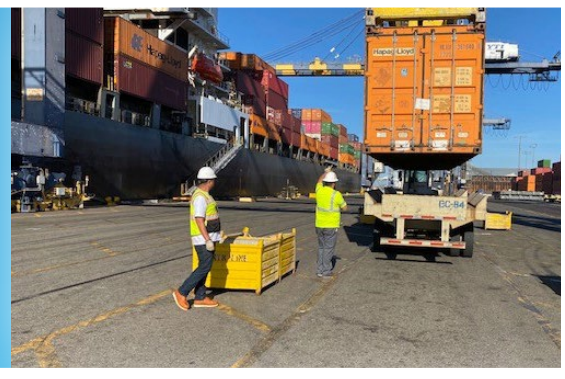
1 Turn off, de-energize, and lockout and tagout all power sources before servicing.

2 Identify confined spaces on cranes and follow safety precautions when entering.

3 Wear fall protection when working on elevated surfaces outside the crane's cab.

4 Know the locations of pinch points and crushing hazards.

5 Be aware of vehicle traffic patterns and conduct work in a protected area.



6 Maintain clear and open radio communication with crane operators.

OSHA 4164-11 2021

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Working Safely on the Apron or Highline during Marine Terminal Operations

Workers involved in marine cargo handling are often exposed to being struck by moving vehicles or equipment. Employers must take measures to ensure workers' safety and health while they are on foot on the apron or highline. Workers in marine terminals should be aware of the following safety measures:

- **Safety Zones** – are provided for the protection of workers on foot while on the highline or apron. Workers should always be aware of the safety zone boundaries and stay within the safety zones at all times while haulage equipment is operating.

- **Traffic Lanes** – are provided to guide and align container haulage equipment operating under cranes. Traffic lanes should be wide enough so that haulage equipment never enters the safety zone. Drivers should ensure that equipment stays within the traffic lane. Drivers should also control their speed while passing workers in safety zones.

For more information:

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OSHA 3539-05 2012

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- **Cone Bins** – should be placed in the safety zones, allowing enough space for workers to walk around them without stepping outside of the safety zone into moving traffic. Forklift drivers should ensure that all workers on foot are clear of the forklift and its load while moving cone bins.
- **Personal Protective Equipment (PPE)** – proper PPE must be worn at all times when workers are on foot on the apron or highline area. Examples of such equipment include high-visibility vests, hard hats and safety toe footwear.
- **Equipment Location** – workers on foot on the apron or highline should be aware of haulage equipment and forklift positions at all times. In addition, workers should:
  - Establish and maintain eye contact with haulage equipment operators;
  - Ensure that the equipment operator is aware of the worker's presence;
  - Stay clear of the bight (pinch/nip point) created by chassis bolsters, bomb cart flanges and wheels; and
  - Be aware of the traffic patterns and turn-out points in use.

Workers in marine terminals should remember to:

- Focus attention toward oncoming traffic;
- Maintain eye contact with haulage equipment operators;
- Report to a supervisor immediately if haulage equipment enters a safety zone; and
- Alert coworkers to approaching equipment and loads overhead.

For more information:

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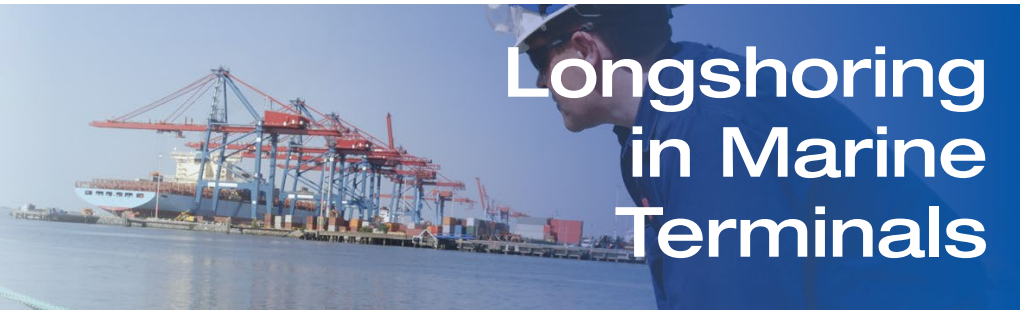


Longshoring in Marine Terminals

Traffic Lanes and Personnel Safety Zones

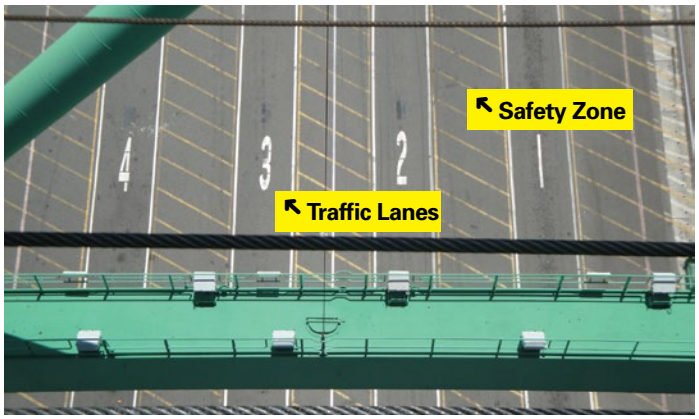
Workers involved in marine cargo handling are often exposed to being struck by moving vehicles or equipment.

When longshore workers are coning, signaling or performing other tasks on foot near cranes, employers should take measures to ensure a safe work environment by providing traffic lanes and personnel safety zones.

The traffic lanes and personnel safety zones should be clearly marked, and wide enough to protect longshore workers, accommodate the equipment being used and, in general, conform to the following guidance:

- Traffic lanes should be wide enough to allow for the widest piece of equipment (e.g., bomb carts, straddle carriers, etc.) expected to be driven within the lanes.
- Personnel safety zones should be provided on both sides of a traffic lane.
- All personnel safety zones should be wide enough to accommodate cone boxes and should provide adequate space for longshore workers to walk around cone boxes without stepping into traffic lanes.
- Provisions should be made to guide drivers so that haulage equipment does not extend into traffic lanes and drivers can align equipment under the crane.
- Semi-tractors should be driven within traffic lanes so that haulage equipment does not extend into personnel safety zones where longshore workers are positioned.
- Special safety provisions should be made to accommodate specialty or project cargo that might be transported under the crane on flatbeds, “mafis” or low boys, and which may extend into personnel safety zones.
- The traffic pattern under the crane should be well established and understood by the drivers and longshore workers on foot. Precautions should be taken if deviations from the traffic pattern must be made – for example, if reefers need to be turned or if equipment turn-outs are planned.

Striped lanes are personnel safety zones.



Unmarked lanes are traffic lanes.

- Hatch covers should not extend into traffic lanes or personnel safety zones.
- During bomb cart operations, cone bins and coning operations should be relocated from under the crane's activity area.

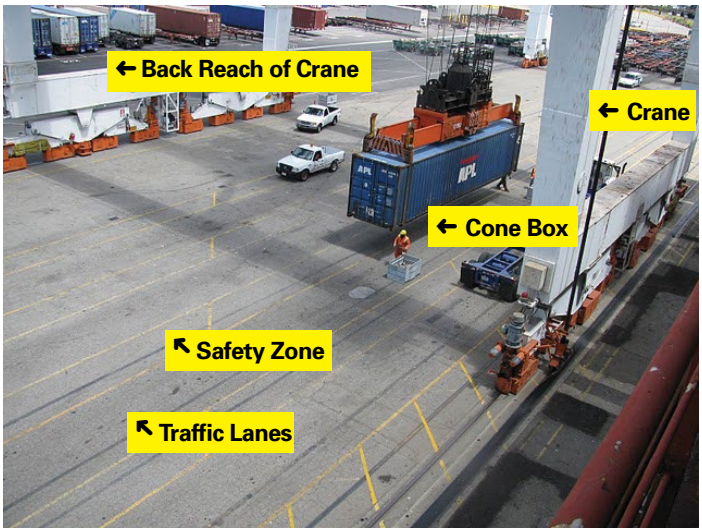
Workers' Rights

Under federal law, workers are entitled to working conditions that do not pose a risk of serious harm.

For more information on how to assure a safe and healthful workplace, see OSHA's Workers page.

How to Contact OSHA

For questions or to get information or advice, to report an emergency, fatality, inpatient hospitalization, amputation, or loss of an eye, or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.



Striped traffic lanes and personnel safety zones under the crane.

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DSG FS-3540 05/2012

OSHA FactSheet

Radio Communication Can Assist Container Gantry Crane Operators in Marine Terminals

Container gantry crane operators load and discharge hundreds of containers in a systematic fashion. The crane operators rely on their line of vision and on signals or directions from employees on the ship and on the ground below to guide them in their lifts. Risk of injuries can be reduced by the use of radio communication by the crane operators and longshore personnel.

Hazards of Container Operations

Container ships come in and out of ports on a regular basis. At each port, containers must be discharged and loaded. This requires close coordination by terminal and longshore personnel working on the ground, on the ship and in the crane. Employees on the ground and on the ship must pay close attention to their surroundings at all times. Employees have been crushed by containers (either falling or being set down), run over by vehicles, and crushed by moving cranes. Cargo operations are particularly hazardous when things do not go as planned, such as when a twistlock becomes jammed, when a container is placed in the wrong position on the ship, or when a vehicle is accidentally lifted along with the container.

Figure 1. **Container gantry crane off-loading containers.**

The Need for Communication

Depending on the particular operation, employees under the crane and/or aboard ship may need to communicate with the crane operator. These employees must be able to communicate rapidly and accurately with the crane operator to help direct the operation and ensure that safety is maintained. During routine operations, employees typically communicate with the crane operator using hand signals recognized at the port. However, during non-routine tasks or in an emergency, employees may need more interactive communication with the crane operator. Non-routine tasks include handling oversized or unusually shaped cargo, hoisting personnel, and handling damaged containers or jammed twistlocks. Emergency situations can occur when one employee sees another employee beneath a load, or when a container is not properly disconnected from a chassis, resulting in accidental lifting of the tractor and chassis with an employee inside.

Radio Communication

A means of communication is required between the operator's cab and the base of the gantry of all rail-mounted cranes. This requirement can be met by telephone, radio, a sound-signaling system or other effective methods, but not solely by hand-signaling, 29 CFR 1917.45(g)(10).

The availability and use of radios to communicate with the crane operator is a particularly effective way to reduce the risk of injuries associated with container operations. In addition:

- The radio should be tested prior to use to ensure that the transmission is clear and reliable.
- Each crane should use a separate channel, if frequencies are available.
- The operator's radio should be equipped with a hands-free system.
- Radios should not be used for personal communication or discussions not related to the operation at hand.
- Make sure that the crane operator and other ground personnel communicating with the crane operator have been trained on how to properly use the radio equipment.

Radio communication across the terminal also plays an important part in responding to accidents and in safely moving equipment and personnel across the terminal. OSHA believes that by using radio communication between personnel working on the ground, on the ship and in the crane, the number of accidents in this hazardous work environment can be reduced.

Figure 2. **Container gantry operator working a vessel.**

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For more complete information:

OSHA Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov

(800) 321-OSHA

DSG 06/2007

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Longshoring in Marine Terminals

Marine Terminal Fall Protection for Personnel Platforms

In marine terminals, personnel platforms attached to the container spreader of a container handling gantry crane are commonly used to transport workers, equipment and tools to and from container ships. The longshoremen then perform various tasks onboard the ship, such as disconnecting the twistlocks that hold cargo containers together, attaching and removing lashing equipment that secure the stacks of containers on the ship, and handling other problems that may arise. During the transport of longshoremen to and from container ships, the hazard of falling is a major concern for employers, ship owners, and the longshoremen.

Fall Protection

Employers are required to ensure that employees use a personal fall protection system while working on top of a vessel's containers (see 29 CFR 1918.85(j)). However, the use of personal fall protection systems is not required while riding in a personnel platform. Instead, platforms must be enclosed by a railing or other equivalent means (29 CFR 1917.45(j) and 1918.66(c)).

OSHA recommends that employers and employees implement the following safety precautions to ensure the safety of workers being transported on personnel platforms:

- Install anchorage points in personnel platforms and ensure that all workers who are being hoisted use a personal fall protection system that meets the requirements of 29 CFR 1918.85(k)(6).
- Place anchorage points away from the entry point of the platform and ensure that the anchorage point does not interfere with the movement of personnel on the platform while the lift is in progress.
- Store tools and equipment safely so that they do not create a tripping or projectile hazard (see 29 CFR 1917.11(a) and 1918.91(a)).
- Require foremen and gang bosses to use the same fall protection methods as other employees.
- Coordinate and discuss the lift operation, the proper use of personal fall protection systems, and other safety issues with all personnel involved including:
  - Crane operator(s);
  - Person(s) being lifted;
  - Person in charge of the operation and;
  - Signal person(s).

Photo: OSHA

Lifts should be coordinated with pre-lift meetings or pre-shift gang meetings. Crane operators should be included in the meeting by radio if they are already in the crane.

Access Openings

OSHA standards require that personnel platforms be equipped with an access opening fitted with a means of closure (see 29 CFR 1917.45(j)(8)). OSHA recommends that employers use personnel platforms equipped with a full gate system meeting the requirements of 29 CFR 1917.45(j)(1)(iii)(A). The gate should swing inward, be self-closing, and use a positive locking mechanism. If a chain closure is used, OSHA recommends that employers instruct their employees to stand away from the opening while being hoisted.

Photo: OSHA

Personnel platform with half gate

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

Photo: OSHA

Personnel platform with locking gate

For additional information, see OSHA's Workers page.

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

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DSG FS-3960 06/2006

Personal Fall Arrest System Checklist

Personal Fall Arrest Systems are one way to protect workers on construction sites where there are vertical drops of 6 or more feet. Systems must be set up so that a worker cannot fall more than 6 feet, nor come into contact with any lower level.

You should be able to answer **Yes** to each of the following.

1. Is your Personal Fall Arrest System made up of an anchorage, connecting device, and a full-body harness?

2. Are the components from the same manufacturer to ensure that the system works as it should? If not, has any substitution or change to a personal fall arrest system been fully evaluated or tested by a competent person to determine that it meets the standard?

3. Has your personal fall arrest system been inspected for damage each time before you wear it? [If there are defects, or if someone has taken a fall using the equipment, it must be removed from service.]

4. Is the attachment location of the body harness in the center of your back, near the shoulder level or above your head?

5. Do vertical lifelines or lanyards have a minimum breaking strength of 5,000 lbs? Are they protected against being cut or abraded?

6. Will each worker be attached to a separate vertical lifeline?

7. Is the webbing, [the materials used for ropes and straps of lifelines, lanyard and harnesses] made of synthetic fibers?

8. Is the anchorage for workers' personal fall arrest equipment independent of any anchorage used to support or suspend platforms? Is it able to support at least 5,000 lbs. per worker attached to it?

9. Are the connectors made from steel or equivalent materials, with a corrosion-resistant finish and smooth edges?

10. Do the D-rings and snaphooks have a minimum tensile strength of 5,000 lbs.?

11. Are snaphooks of a locking-type and designed to prevent the snaphook from opening and slipping off the connector?

12. Are the snaphooks not *directly connected* to the webbing, rope or wire, to each other, to a D-ring to which another snaphook or other connector is attached, to a horizontal lifeline, or to any other object that could cause the snaphook to open?

Source:
Construction Safety & Health Fall Hazards, Central New York COSH, 2007, OSHA grant product

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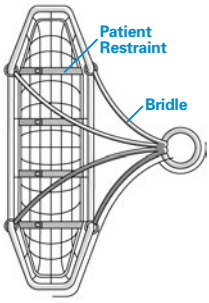
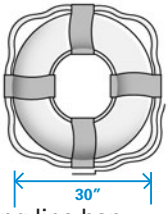
Lifesaving Facilities in Marine Cargo Handling

Workers involved in marine cargo handling operations are exposed to many hazards. Workers should be aware of the various lifesaving equipment requirements, which, if followed, may help to reduce response time and increase their chances of survival.



- **Stokes Basket Stretchers,** or their equivalent, must be kept near each vessel being worked and have:
  - Permanent bridles, capable of lifting 1,000 lbs., for attaching to hoisting gear;
  - A blanket or other suitable covering;
  - At least four sets of effective patient restraints; and
  - Lifting bridles and foot plates for making vertical lifts from container berths.
  - Stretchers must be kept in an operable condition and be protected from the elements. Stretchers in permanent locations must be mounted to prevent damage.
  - If the stretcher location is hidden from view, a sign must be labeled "Lifesaving Equipment," or similar language, to indicate its location.
- **Life Rings** must be easily accessible at waterside work areas, measure 30 inches in diameter, and have at least 90 feet of line attached.



- **Personal Flotation Devices (PFDs)** must be U.S. Coast Guard-approved and worn by workers who are doing tasks during which they might fall into the water and drown (e.g., on a bridge or gangway-like structure leading to a detached vessel, during line handling, or working in isolation), unless the employer has installed railings or nets, or if workers are using safety harnesses and lifelines.
- A **portable or permanent ladder,** giving access to the water, must be located within 200 feet of work areas where there are drowning hazards.

Remember:

Report any problems with equipment to a supervisor immediately.

For further information, see 29 CFR 1917.26, 1917.95, 1918.97, and 1918.105.

For more complete information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA

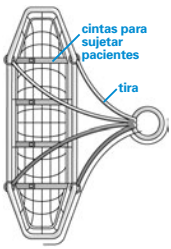
OSHA 3367-12N-09

OSHA® DATOS RÁPIDOS

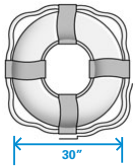
Facilidades Salvavidas en el Manejo de Cargas Marítimas

Los trabajadores involucrados en las operaciones de manejo de cargas marítimas están expuestos a muchos riesgos. Los trabajadores deben estar informados sobre los varios requisitos sobre equipos de salvamento que, de ser acatados, pueden ayudar a reducir el tiempo de respuesta y aumentar sus probabilidades de supervivencia.

- **Camillas de canasta**, o su equivalente, deben mantenerse cerca de cada embarcación donde se realicen trabajos y tener:
  - Tiras permanentes, capaces de levantar 1,000 libras, para fijarse a equipo de izado;
  - un cobertor u otras cubiertas adecuadas;
  - Al menos cuatro conjuntos de cintas efectivas para sujetar pacientes; y
  - Tiras de levantamiento y placas de pie para realizar levantamientos verticales desde los atracaderos de contenedores.
  - Camillas que deben mantenerse en condiciones operacionales y estar protegidas contra los elementos. Las camillas en ubicaciones permanentes deben estar montadas para prevenir daños.
  - Si la ubicación de la camilla no está a simple vista, un rótulo debe etiquetarse como "equipo de salvamento" o con un lenguaje similar, para indicar su ubicación.



- **Los salvavidas tipo anillo** deben estar fácilmente accesibles en las áreas de trabajo al borde del agua, tener un diámetro de 30 pulgadas y tener una línea fijada de al menos 90 pies.
- **Los dispositivos personales de flotación (PFDs)** deben ser aprobados por la Guardia Costanera de Estados Unidos y ser utilizados por trabajadores que estén realizando tareas durante las cuales podrían caer al agua y ahogarse (e.g., en un puente o estructura parecida a una pasarela que conduzca hacia una embarcación separada, durante el manejo de líneas, o al trabajar en aislamiento), a menos que el patrono haya instalado barandillas o redes, o si los trabajadores están utilizando arneses de seguridad y cuerdas salvavidas.



- **Una escala portátil o permanente**, permitiendo acceso al agua, debe ubicarse a 200 pies o menos de las áreas de trabajo donde existan riesgos de ahogamiento.

Recuerde:

lInforme a un supervisor inmediatamente cualquier problema relacionado con el equipo.

Para mayor información, véase 29 CFR 1917.26 y 1918.97.

Para información más completa:

OSHA® **Administración de Seguridad y Salud Ocupacional**
Departamento del Trabajo de EE.UU.
www.osha.gov (800) 321-OSHA

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Fact Sheet

Personal Protective Equipment

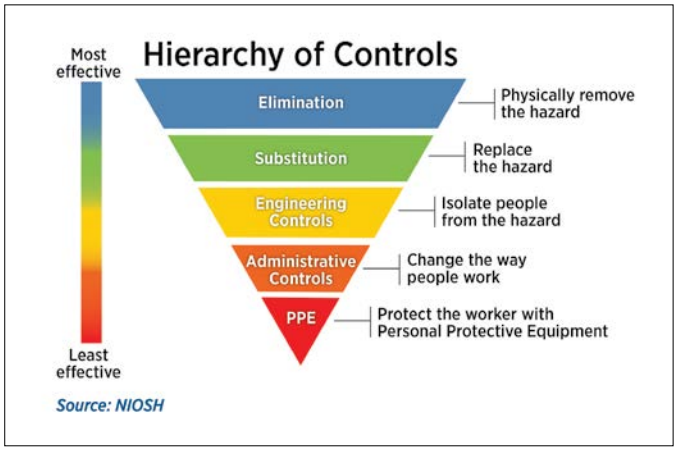
Guidelines for Assessment, Selection, and Training

Shipyard employment is dangerous work. As a result, the use of personal protective equipment (PPE) in conjunction with engineering controls, work practices, and administrative controls is necessary for most operations. Typical PPE for shipyard work may include protection for the eyes, face, feet and head, knees and elbows, protective clothing and gloves, respiratory and hearing protection, and fall protection. Employers must assess work activities to determine hazards and identify the appropriate controls.

Conducting a Hazard Assessment

A hazard assessment identifies hazards that require the use of PPE. To adequately protect workers, OSHA recommends that employers:

1. **Collect, organize, and analyze information** on workplace hazards that may already be available through operating manuals, safety data sheets (SDS), previous injury and illness records, safety committee findings, and workers' compensation reports.
2. **Inspect the workplace and observe workplace operations** to identify hazards such as falling objects, harmful chemicals, dust accumulation, radiation exposures (ionizing and non-ionizing), noise, drowning, and hazardous energy. Inspections should be conducted regularly and include all operations, equipment, work areas, and facilities during each shift.
3. **Identify control options** for identified hazards. Each hazard should be classified by type, level of risk, and the seriousness of any potential injury. Use input from workers, OSHA standards and guidance, industry consensus standards, National Institute for Occupational Safety and Health (NIOSH) publications, and manufacturers' literature to determine potential control measures.
4. **Select and implement** the control measures determined to be the most effective and feasible, making sure not to introduce new hazards (e.g., exhaust of contaminated air into occupied work spaces). The use of engineering controls, safe work practices, and administrative controls should be explored first, followed by PPE.
5. **Follow up** to confirm that the control measures implemented are effective. All PPE must be kept clean and in good working order. Any defective or damaged protective equipment must be replaced and reissued PPE must be cleaned and sanitized before reuse.



Selection of Personal Protective Equipment

When the use of PPE is necessary, employers should select PPE that provides protection greater than the minimum required. Where an assessment identifies exposures to multiple hazards, PPE that protects workers from those hazards, with emphasis on the most severe hazard, should be provided (such as when selecting welding gloves).

PPE must fit properly and should be sufficiently comfortable to encourage use. During selection, employers need to:

- Be familiar with all potential hazards and the types of PPE available;
- Evaluate the hazards associated with the work environment and the capabilities of the available PPE;
- Choose the PPE that ensures an adequate level of protection without presenting other risks for workers; and

- Fit workers with the appropriate protective device(s) and provide training for its use and care. Workers should be made aware of all warning labels and limitations of their PPE.

Appendix A of 29 CFR part 1915, subpart I provides recommended PPE for common work activities conducted in shipyard employment. Supplemental protective equipment may be required, such as using chemical-resistant boots during work in tanks or voids.

Payment for Personal Protective Equipment

Employers must provide workers with appropriate PPE required by OSHA standards at no cost to the workers (29 CFR 1915.152) — **except**:

- Shoes or boots with built-in metatarsal protection that employees ask to use instead of metatarsal guards that are provided by the employer at no cost to employees;
- Everyday clothing, such as long-sleeve shirts, long pants, street shoes, and normal work boots; or ordinary clothing, skin creams, or other items used solely for protection from weather — such as winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, ordinary sunglasses, and sunscreen;
- Non-specialty safety-toe protective footwear (including steel-toe shoes or steel-toe boots) and non-specialty prescription safety eyewear, provided that the employer permits these items to be worn off the jobsite;
- Replacement PPE when the employee has lost or intentionally damaged the PPE; and
- Employee-owned PPE where the worker volunteers to use the PPE they already own. Employers must ensure that the worker-owned PPE fits properly and provides adequate protection.

Eye and Face Protection

Shipyard workers can have their eyes and faces exposed to numerous hazards, including flying particles, light radiation, and acids or caustic liquids. The necessary eye and face protection will vary depending on the work activity. Employers must supply appropriate PPE for the work being done, and make sure it is worn. Where workers require corrective lenses, the prescription lenses should be incorporated into the design of the eye protection when possible. While it is acceptable to wear additional eye protection over their prescription lenses, it is important that the protective eye wear does not inhibit or limit the worker's vision, nor interfere with the protective eyewear fitting properly.

Foot Protection

Many occupations in shipyard employment require the use of safety shoes. Safety shoes, including boots, must meet the specifications contained in any of the following consensus standards — ASTM F-2412-2005 and ASTM F-2413-2005, ANSI Z41-1999, or ANSI Z41-1991 — and provide impact and compression protection for the foot.

Metatarsal guards, made of aluminum, steel, fiber, or plastic, are effective in limiting injury caused by the impact of heavy objects on the instep (or top portion) of the foot. Electrical workers must wear safety shoes that are non-conductive. Safety shoes or boots with rubber or synthetic material are used for protection against acids, caustics, and other solvents. When necessary, safety shoes or boots can be obtained that provide puncture protection. As with all protective equipment, safety footwear should be inspected before each use for cracks, holes, separation of materials, and broken buckles or laces. It is important to follow the manufacturer's cleaning and maintenance recommendations, as well as to check soles for embedded items (e.g., metal fragments).

Head Protection

Head protection is required if there is the potential for objects to strike and penetrate workers on their heads, or workers' heads to come into contact with electrical hazards. Hard hats must meet the American National Standards Institute (ANSI) Z89.1 standard, which defines the types and classes of hard hats for specific hazards; design and performance requirements for impact, penetration, and electrical shock; and testing requirements. Although manufacturers typically test and certify their products, employers must verify that their hard hats meet OSHA standards.

Hard hats must be replaced if they show signs of damage (dents, cracks, penetration, or fatigue due to rough treatment). Hard hats should be inspected for damage and signs of fatigue each time they are used. Labels or paints should not be applied to hard hats. These materials have the potential to conceal defects or damage that would compromise its effectiveness, and may also eliminate electrical resistance. The life span of hard hats will vary depending on the work environments. Many hard hat manufacturers recommend that they be replaced every five years, as well as support straps annually, regardless of their appearance. Exposure to high temperatures, chemicals, or sunlight may accelerate deterioration; in such situations, hard hats should be replaced more frequently.

Protective Clothing and Gloves

Employers are responsible for supplying and ensuring that workers use the appropriate protective clothing, including flame-resistant, high-voltage, and utility coveralls; and gloves or other hand protection to prevent skin absorption of harmful substances, thermal burns, and cuts or scrapes from sharp objects. When selecting the appropriate protective clothing, employers should take into account the reason for use, the duration and frequency it will be worn, the degree of dexterity needed, and whether disposable or reusable clothing is appropriate. PPE intended to protect workers from exposure to toxic substances or harmful physical agents should be inspected before each use for damage that could compromise safety.

Knee and Elbow Protection

Shipyard work activities, such as welding or grinding, often put workers in awkward and prolonged static postures, such as kneeling or leaning on their elbows. Whenever possible, changes to equipment, work practices, and procedures should be implemented to minimize these risk factors. For example, long extension handles for hand tools enable operators to work from a standing position, instead of kneeling or crouching for extended periods. Knee and elbow pads (or similar supports) help distribute weight evenly and reduce contact stress.

Respiratory Protection

Respirators effectively protect workers from occupational diseases caused by contaminated breathing air; their use is encouraged even when exposures are below the exposure limit. However, the control of contaminants, such as from harmful dusts, fogs, fumes, etc., should first be attempted through the use of engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When such controls are determined infeasible, or while they are being installed, employers must provide workers with adequate respiratory protection equipment, training, and medical evaluations as outlined in 29 CFR 1910.134. Before initial use of respirators, and at least annually, workers must be trained on:

- Why the respirator is necessary and how proper fit, usage, or maintenance can increase its effectiveness;
- The limitations and capabilities of the respirator;
- How to use the respirator in emergency situations, including situations in which the respirator malfunctions;
- How to inspect, put on and remove, use, and check the seals of the respirator;
- Procedures for maintenance and storage; and
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.

The voluntary use of respirators is permitted to offer an added level of comfort and protection for workers, but should be monitored closely. Paragraph (c) of 29 CFR 1910.134 provides requirements where respirator use is not required, but worn voluntarily. If a respirator is used improperly or not kept clean, the respirator can become a hazard to the worker. Whether employers provide workers with respirators, or workers use their own respirators voluntarily, the employer must ensure that the equipment fits properly, is certified to protect workers from the contaminant of concern, and manufacturer's instructions are followed.

Fall Protection

In shipyards, workers have the potential to fall from overhead platforms or other elevated locations. Employers must identify and provide fall protection devices as outlined in 29 CFR 1915.159 and 1915.160 to protect workers from such fall hazards. Workers must be trained to understand the application limits of the equipment and proper hook-up, anchoring, and tie-off techniques. Training must also ensure that workers can demonstrate the proper use, inspection, and storage of their equipment.

Hearing Protection

Noise at excessive levels in the workplace can lead to hearing loss, tinnitus (ringing in the ear), stress, anxiety, high blood pressure, gastrointestinal problems, and chronic fatigue. OSHA's permissible exposure limit (PEL) for noise, as outlined in 29 CFR 1910.95, is 90 decibel (dB) for an 8-hour time-weighted average (TWA), using an exchange rate 5 dB. This means that when the noise level is increased by 5 dB, the amount of time a person can be exposed to that noise level without hearing protection is cut in half (e.g., 95 dB = 4 hours of maximum exposure). In cases where workplace sound levels exceed the PEL, employers must implement administrative and/or engineering controls to protect workers. When engineering or administrative controls fail to reduce the noise level to within the permissible levels, hearing protection (ear plugs or earmuffs) must be provided and used to reduce the noise to an acceptable level.

Implementation of a hearing conservation program is required when workers are exposed to a TWA noise level of 85 dB or higher over an 8-hour work shift. This means employers must measure noise levels and supply workers with the appropriate level of hearing protection. Workers must be trained in the use and care of the hearing protection.

Repeat sampling of noise levels must be conducted whenever a change in production, process, equipment, or controls has the potential for an increase in noise exposures. This will help to evaluate the adequacy of the hearing protection in use, as well as identify other workers that may be exposed at or above the action level. Performance of a 6-month baseline and annual hearing exams, which must be provided to workers at no cost, is required.

Training

Training workers about hazards and controls is an important part of workplace safety. Where hazards or the potential for hazards are identified that require the use of PPE, employers must provide and ensure that each affected worker is trained in and uses the appropriate PPE (29 CFR 1915.152). This includes protective clothing, protective shields, protective barriers, personal fall protection equipment, and lifesaving equipment. Workers required to use PPE must be trained to know:

- When PPE is necessary;
- What kind of PPE is necessary;
- How to properly put it on, adjust, wear, and take off PPE;
- The limitations of the equipment; and
- Proper care, maintenance, useful life, and disposal of the equipment.

On-Site Consultation

OSHA's On-Site Consultation Program offers free and confidential occupational safety and health services to small and medium-sized businesses in all states and several territories, with priority given to high-hazard worksites. On-Site Consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing and improving safety and health programs. To locate the OSHA On-Site Consultation Program nearest you, call 1-800-321-6742 (OSHA) or visit www.osha.gov/consultation.

More Information

For additional information, see OSHA's shipbuilding and repair webpage at www.osha.gov/SLTC/shipbuildingrepair, Enforcement Guidelines for Personal Protective Equipment (PPE) in Shipyard Employment (CPL 02-01-049), and implementing a safety and health program at www.osha.gov/shpguidelines.

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see OSHA's Workers page (www.osha.gov/workers).

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

U.S. Department of Labor

OSHA® Occupational Safety and Health Administration

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: 1-877-889-5627.

DSG FS-3951 06/2018

OSHA® QUICK CARD™

Safe Operation of Semi-tractors in Marine Terminals

Semi-tractors are a critical part of marine terminal operations. Operating these vehicles around heavy equipment, workers on foot, railcars, powered industrial trucks, and other over-the-road vehicles can pose a risk to workers. Employers must take measures to ensure a safe work environment for the operators of these vehicles.

Employers must:

- Ensure that equipment is safe and properly maintained by inspecting all vehicles prior to use.
- Provide training.
- Properly supervise workers.
- Provide rescue procedures in case of an emergency.

Ways to prevent tip-overs:

- Do not back up in the jackknife position. This will reduce the stability of the semi-tractor.
- Keep the fifth wheel as low as possible to the ground without hitting or grounding the landing legs. This will improve balance. To keep the fifth wheel low, the landing may be cranked up.
- Drive around corners at lower speeds.

Semi-tractor tip-over injuries can be prevented.

Safe vehicle operation and techniques include:

- **Vehicle inspection** — should include backup alarms, lights, seat belts, and horns. Safety equipment must not be removed (§1917.44(n)). Workers should immediately report any defects to the supervisor. Do not use vehicles that are not working properly.

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA 3653-05 2013

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- **Unobstructed view** — employers must instruct workers to slow down and sound the horn at cross-aisles and other locations where visibility is obstructed §1917.43(b)(8). Whenever possible, avoid backing up from the blind side. If you must back up from the blind side, check to ensure that the area is free from hazards and pedestrians. If necessary, use a spotter and radio communication to ensure that blind-side backing up is performed safely. If radio communication is not available, hand signals between the driver and the spotter may be used.
- **Distracted operators** — should not be allowed to use cell phones, two-way radios, eat, or do any other non-driving activities while operating equipment.
- **Impaired workers** — should not operate equipment when fatigued, using medications (prescription or non-prescription), alcohol, or illegal drugs. In addition, workers should:
  - Use the S-curve backing procedure.
  - Avoid sudden acceleration, jerking motions and sudden stopping when backing up.
  - Always back up slowly and carefully.
  - Obey speed limits, traffic signs and signals, and written traffic safety instructions as required in §1917.44(d).

For further information about semi-tractor safety in marine terminals see: Longshoring and Marine Terminals Fatal Facts: Section 1 — Vehicular Accidents, Summary #15 — Semi Tractor Tip-Over and NMSA Safety Video #3.

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA® FactSheet

Servicing Multi-Piece and Single-Piece Rim Wheels in Marine Terminals

Requirements for servicing multi-piece and single-piece rim wheels in marine terminals can be found in 29 CFR 1917.44(o) (tube-type wheels), and 29 CFR 1910.177. This fact sheet is for employers and workers, to demonstrate the hazards associated with handling multi-piece and single-piece rim wheels. It also highlights the OSHA regulations which protect workers.

Hazards

The air pressure contained in a tire is very dangerous. When fully inflated, a truck tire can exert more than 40,000 pounds of pressure against the rim flange. The most common hazards found during servicing rim wheels occur during inflation. The seating rings should be properly set or seated during inflation. If the rings are not set properly, the rings or the removable flanges can violently separate from the assembly, causing an explosion and forcefully propelling components of the assembly up to 130 mph. Similarly, another hazard found during the servicing of single-piece rim wheels is that the pressurized air contained in the tire may suddenly be released, either by the bead breaking, the bead slipping over the rim flange, or a zipper rupture.

Servicing

Marine terminal workers may service various types of vehicles equipped with multi-piece or single-piece rim wheels. Workers servicing these types of wheels must have the proper training and be aware of the requirements outlined in §1917.44(o), and §1910.177. The most common vehicles with these types of wheels include: cranes, top-handlers, side-picks, yard hustlers, chassis, trucks, tractors and trailers.

Failure to follow proper procedures when servicing rim wheels can result in serious injury or death. Prior to servicing any rim wheel assembly, workers should always:

- Completely deflate the tire (or both tires of a dual assembly) by taking out the valve core(s) before loosening any nuts or clamps that attach a tube-type tire/rim assembly of a vehicle;
- Use a non-flammable vegetable or soap-based rubber lubricant on the rim surfaces to make tire demounting and mounting easier;
- Use proper tools to demount or mount tires and rims;
- Use a steel duck bill hammer only as a wedge to unseat the beads of tube-type tires;
- Wear adequate protective eyewear (or a face shield), protective footwear and ear protection;
- Use soft-faced hammers to drive the tire irons or assemble components;
- Keep tools clean and inspect them frequently;
- Demount inspect and match all tire and rim components, before reinflating them in a restraining device with the valve core removed; and
- Always stay out of the possible air pressure explosion path (trajectory) area, see §1910.177(f)(10) and §1910.177(g)(8).

Workers should NEVER:

- Use a steel hammer to seat rim components;
- Strike a rim/wheel assembly with a hard-faced hammer (can damage the components and endanger the installer), and never use a rubber mallet or plastic dead-blow hammer;
- Reinflate any tire that has been operated in a run-flat or underinflated condition;
- Use a tire tool for anything except demounting and mounting tires;
- Use an extension or "cheater" bar with tire irons;
- Use a hammer with a loose or cracked handle;
- Use a bent, cracked, chipped, dented or mushroomed tool; and
- Modify or apply heat to any tire service tool.

Training

Employers must train workers on how to service multi-piece and single-piece rim wheels §1910.177(c)(1). Employers must ensure that workers understand, demonstrate and maintain the ability to safely service multi-piece and single-piece rim wheels. Employers must supply the required charts and/or manuals on servicing multi-piece and single-piece rim wheels as required in §1917.44(o)(5)(i)[1], and §1910.177(d)(5). OSHA will allow the use of any other manual or poster that provides at least the same instructions, safety precautions, and other information contained in these charts/manuals, which apply to the types of wheels the employer is servicing. Employers should provide a copy of the §1910.177 regulations to each worker who services rim wheels and should review the regulations for servicing multi-piece and single-piece rim wheels with each of these workers.

Safety Talk

Employers may use this fact sheet as the basis for tool box safety talks to ensure workers are aware of all hazards associated with servicing multi-piece or single-piece rim wheels.

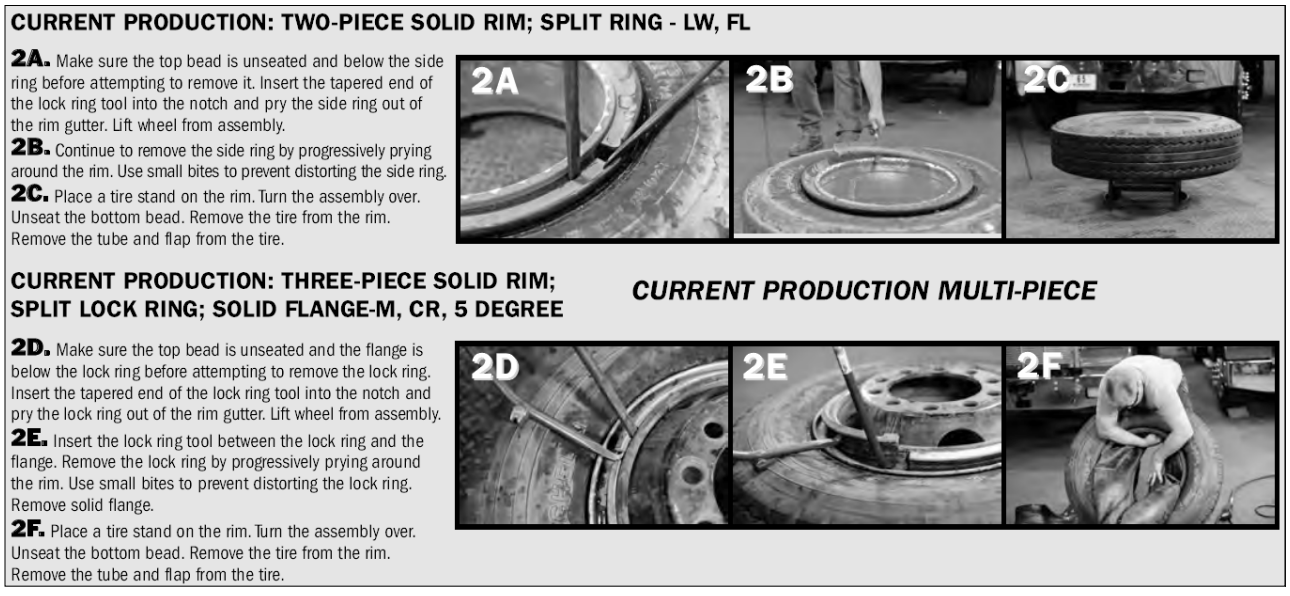
Demounting

Always remove the valve core from the tire stem and insert wire into the tire assembly to ensure complete deflation before demounting (§1917.44(o)(4)(i), and §1910.177(f)(1)). Tires must be inspected prior to removing the valve core. Sometimes a split rim wheel will be mounted on the inside of a single-piece rim wheel. Therefore, workers must fully inspect rim wheels prior to servicing in order to understand the scope of the work and the potential hazards involved.

Mounting/Inflation

Pre-inspect rim wheel for improperly matched, damaged, or corroded components as required in §1917.44(o)(4)(ix), §1910.177(e)(2).

There must be an in-line valve with a pressure gauge or a pre-settable regulator §1910.177(d)(4)(ii). Always use a clip-on chuck with a sufficient length of hose between the chuck and the in-line valve to ensure that workers can stand outside the trajectory zone (§1910.177(d)(4)(iii)). When seating the tire bead, do not exceed 3 psi before placing assembly in an OSHA compliant restraining device 29 CFR 1917.44(o)(4)(v). Workers servicing rim wheels must always use a restraining device during tire



Mounting tire on rim/wheel assembly tube type; multi-piece

1. On December 27, 2011 (76 FR 80735) OSHA amended §1910.177 by updating the provisions regarding the tire charts. Section 1917.44(o)(5)(i) will be revised via a technical amendment in the future to refer to the updated charts. Meanwhile the charts to be referred to are on the OSHA webpage at www.osha.gov/pls/publications/publication.athruz?pType=Industry&pID=319.

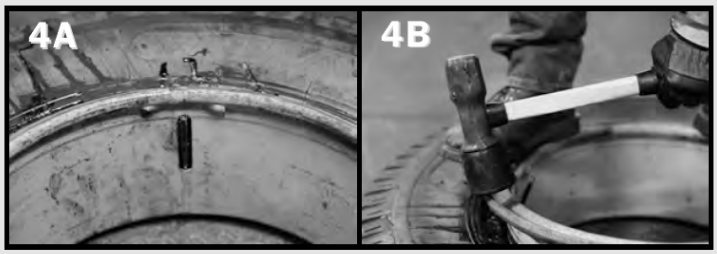
inflation §1910.177(d)(1), (d)(2), and (f)(7). Before removing the tire, inspect the ring to see if it is properly seated and locked (1917.44(o)(4)(viii) and §1910.177(f)(7)).

Workers servicing rim wheels must instructed on the safe operating procedures for servicing rim wheels as outlined in (§1917.44(o)(4), and §1910.177(f) and (g)).

CURRENT PRODUCTION: TWO-PIECE SOLID RIM; SPLIT RING - LW, FL

4A. Lay the rim on the floor and align the valve stem with the slot in the rim. Lift the tire at the valve stem to work it onto the rim. For rims with bead humps, make sure the top bead is below the bead hump before attempting to install the side ring.

4B. Insert one end of the side ring into the rim gutter and use a rubber mallet or dead-blow hammer to progressively seat the remainder of the side ring in the rim gutter.

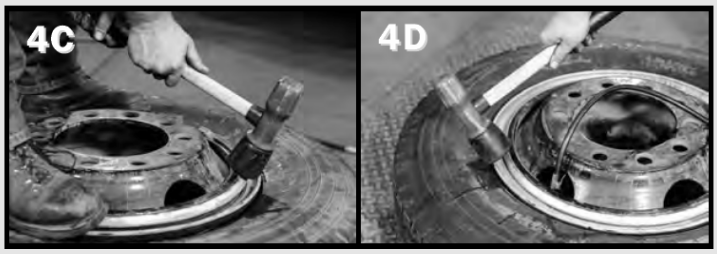


CURRENT PRODUCTION: THREE-PIECE SOLID RIM; SPLIT LOCK RING; SOLID FLANGE-M, CR, 5 DEGREE

4C. Lay the rim on the floor and align the valve stem with the slot in the rim. Lift the tire at the valve stem to work it onto the rim. For rims with bead humps, make sure the top bead is below the bead hump before attempting to install the side ring. Install the flange making sure it is below the rim gutter.

4D. Insert the end of the lock ring in the rim gutter and use a rubber mallet or dead-blow hammer to progressively seat the remainder of the lock ring in the rim gutter.

4E. Ensure the lock ring is completely seated in the rim gutter by using the rubber mallet or dead-blow hammer before attempting to inflate the tire.



Deflating and Demounting tire from rim/wheel assembly — tube type; multi-piece

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For assistance, contact us. We can help. It's confidential.

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DSG FS-3654 05/2014

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Longshoring in Marine Terminals

Preventing Semi-Tractor Driver Injuries during Container Lifting Operations

As shore-side gantry cranes lift containers from semi-tractors in marine terminals, truck drivers may be exposed to injuries from being thrown about the cab unexpectedly, or "jostling." The jostling of a driver can cause impact injuries, sprains, strains, and back injuries due to the truck cab landing violently and unexpectedly on the ground. Proper training of workers and clear communication during lifting operations are essential in reducing semi-tractor lifting incidents and the injuries associated with jostling.

Jostling incidents occur when containers are lifted while they are still connected (either fully or partially, by the locking mechanism) to the container chassis, causing the semi-tractor to be lifted into the air along with the container. When a semi-tractor is lifted with the container, the locking mechanism on the semi-tractor's chassis will often disengage in midair. This causes the chassis to freefall and land forcefully on the ground, resulting in the driver being jostled in the cab of their vehicle. In some incidents, semi-tractor drivers have been lifted in their vehicles as high as 30 feet off the ground.

Ways to Prevent Lifting Incidents

Before workers engage in lifting operations, employers must:

- Ensure that any employees who operate cranes are competent to do so (29 CFR 1917.27(a)). Competent crane operators should be trained to properly utilize their line of vision, and understand signals and/or directions from workers on the ground to guide their lifts.
- Ensure that containers are inspected for defects before lifting them (29 CFR 1917.71(g)(1)). Pinmen should be trained to visually inspect container fittings for defects before a container is lifted to ensure that locking pins ("dogs") will fully disengage and unlock.
- Ensure that containers are not hoisted unless all chassis twist locks are released (29 CFR 1917.71(h)). Workers should be trained to visually confirm that all chassis twist locks are released prior to lifting a container.

Photo: Eagle Marine Services

Semi-tractor with partially disengaged locking mechanism.

In addition, employers should train workers to:

- Maintain clear communication between the signalman and the crane operator during the lift.
- Effectively communicate all transitions to/from chassis and bomb-carts between signalmen and crane operators.
- Ensure that signalmen and semi-tractor drivers understand the importance of the chassis being properly aligned under the crane hook, and that semi-tractor drivers pay particular attention to signals to ensure proper alignment.

- Make sure that crane operators always lift the container slowly and "float the load."
- Always check that the container and chassis are separated before giving the "all-clear" signal.

If, for any reason, an incident occurs in which the chassis and container are both lifted, the following actions should be taken:

- All "lifting" incidents should be reported to the employer and/or company safety personnel as appropriate.
- Any semi-tractor driver who has experienced "jostling" should be checked for injuries.
- Any chassis involved in a lifting incident should be red tagged and removed from service.

Remember:

Thoroughly training workers, ensuring proper teamwork, and effective communication during lifting operations can help employers to prevent the serious injuries that can result from semi-tractor lifting incidents.

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.

Photo: Eagle Marine Services

Container is partially disconnected causing the chassis to lift.

- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see OSHA's Workers page.

How to Contact OSHA

For questions or to get information or advice, to report an emergency, fatality, inpatient hospitalization, amputation, or loss of an eye, or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

For assistance, contact us. We can help. It's confidential.

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

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DSG FS-3858 04/2016

OSHA® FactSheet

Hazard Communication in the Maritime Industry

This fact sheet describes the hazard communication requirements for work performed in the maritime industry (see 29 CFR Parts 1915, 1917, and 1918), as specified in the Hazard Communication Final Rule.

Hazard Communication

OSHA revised its Hazard Communication Standard (HCS 2012), 29 CFR 1910.1200, on March 26, 2012, to align it with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). HCS 2012 provides a standardized, coherent approach to both classifying chemicals and communicating the hazards of those chemicals on labels and safety data sheets (SDSs). The changes to the HCS include revised criteria for classification of chemical hazards; revised labeling provisions to require the use of standardized signal words, pictograms, hazard statements, and precautionary statements; a specified format for SDSs; and requirements for employee training on labels and SDSs. The hazard communication requirements under HCS 2012 are applicable to maritime employment. *See* §1915.1200 (shipyard employment), §1917.1(a)(2)(vi) (marine terminals), §1918.1(b)(4) (longshoring).

While several changes were made as part of the standard's revision, employers' obligations remain largely the same. Employers are still responsible for maintaining a written hazard communication program at each workplace, maintaining labels on shipped containers of chemicals, labeling secondary (in-house) containers of chemicals, using SDSs, providing workers information and training, and ensuring the effective communication of potential exposure to hazardous chemicals. Where multi-employer worksites exist, the hazard communication program must also include steps for the communication of hazards to the workers of the other employers.

Hazardous Chemicals

Under HCS 2012, a *hazardous chemical* means any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified (§1910.1200(c)). This definition mirrors the meaning of a *hazardous substance* in shipyard employment, which is defined as any substance that may cause injury, illness, or disease, or otherwise harm an employee by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful (§1915.80(b)(9)). Therefore, OSHA considers a substance to be hazardous if it poses a physical or health hazard, or if it is classified as a simple asphyxiant, a combustible dust, a pyrophoric gas, or a hazard not otherwise classified.

The Effect of Revisions to the HCS on Standards Applicable to the Maritime Industry

The revisions made to the HCS in order to conform to the GHS necessitated modification of several other OSHA standards that reference HCS definitions. For example, OSHA modified the definition of flammable liquids in §1910.106 in order to align with the HCS 2012's hazard categories for flammable liquids based on flashpoint criteria. Additionally, modifications were made to most substance-specific health standards to ensure that requirements for signs, labels, and SDSs are consistent with the HCS 2012.

The three tables below outline the requirements in 29 CFR Part 1910 affected by the HCS 2012 that apply to the maritime industry.

TABLE 1: 29 CFR Part 1915 – Shipyard Employment

General Industry Standards	Maritime Industry Applicability of General Industry Standards
1910.106 Flammable liquids	Applies on vessels and on shore for covered flammable and combustible liquids operations; not applicable for fuel tanks and bulk cargo tanks that are part of the vessel. The maritime industry generally does not use flashpoint criteria to distinguish between flammable and combustible liquids. Section 1910.106 applies to shipyard employment when the definitions of flammable and combustible liquids are not specified in Part 1915 shipyard standards; however, where a specific Part 1915 shipyard requirement provides flashpoint criteria, those requirements take precedence over the definitions in §1910.106.
1910.107 Spray finishing using flammable and combustible materials	Applies on vessels and on shore for spray booths; however, spray booths are usually located on shore in shipyards. ***Specific applicable sections include:*** §1910.107(c) on vessels and on shore for electrical and other sources of ignition. §1910.107(d) on shore; however, §§1915.35 and 1915.36 apply to vessels for ventilation and exhaust systems. §1910.107(e) on vessels and on shore (§1915.36 also applies) §1910.107(f) on shore for the protection of sprinklered buildings §1910.107(g) on vessels and on shore, excluding §§1910.107(g)(2) and (g)(5), which are preempted by §§1915.35(b)(6), 1915.32, and 1915.33 §1910.107(h) on vessels and on shore §1910.107(i) on vessels and on shore §1910.107(j) on vessels and on shore §1910.107(k) on shore §1910.107(l) on vessels and on shore §1910.107(m) on vessels and on shore
1910.119 Process safety management of highly hazardous chemicals	Applies on vessels and on shore for process safety management of highly hazardous chemicals.
1910.120 Hazardous waste operations and emergency response	Applies on vessels and on shore for hazardous waste operations.
1910.123–1910.126 Dipping and coating operations	Applies on vessels and on shore for hazards associated with dip tanks; these standards are not preempted by §§1915.32 and 1915.33. Dip tanks located in confined or enclosed spaces must meet the requirements of 29 CFR Part 1915, Subpart B.

General Industry Standards	Maritime Industry Applicability of General Industry Standards
1910.252 General requirements (Welding, Cutting, and Brazing) ***On Vessels & On Shore*** 1910.252(a)(3) 1910.252(a)(4)(i) 1910.252(b)(1) 1910.252(b)(2)(ii) 1910.252(b)(2)(iii) 1910.252(c)(1)(i)–(ii) 1910.252(c)(1)(iv) 1910.252(c)(2)(ii) 1910.252(c)(3)(i) 1910.252(c)(3)(ii) 1910.252(c)(4)(iii) 1910.252(c)(4)(iv) 1910.252(c)(5) 1910.252(c)(11)–(13) 1910.252(d) ***On Shore Only*** 1910.252(c)(6)–(10)	Applies on vessels and on shore for welding, cutting and brazing general requirements. Note: • 29 CFR Part 1915 Subpart P (§§1915.501 through 1915.509) applies for all shipyard employment fire protection. • §1915.51 – Ventilation and protection in welding, cutting and heating take precedence over General Industry standards.
1910.1003 13 Carcinogens	Applies on vessels and on shore for 13 carcinogens; incorporated by reference — §**1915.1003**: 4-Nitrobiphenyl; §**1915.1004**: alpha-Naphthylamine; §**1915.1006**: Methyl chloromethyl ether; §**1915.1007**: 3,3′-Dichlorobenzidine; §**1915.1008**: bis-Chloromethyl ether; §**1915.1009**: beta-Naphthylamine; §**1915.1010**: Benzidine; §**1915.1011**: 4-Aminodiphenyl; §**1915.1012**: Ethyleneimine; §**1915.1013**: beta-Propiolactone; §**1915.1014**: 2-Acetylaminofluorene; §**1915.1015**: 4-Dimethylaminoazobenzene; and §**1915.1016**: N-Nitrosodimethylamine
1910.1017 Vinyl chloride	Applies on vessels and on shore for vinyl chloride; incorporated by reference — §1915.1017
1910.1018 Inorganic arsenic	Applies on vessels and on shore for inorganic arsenic; incorporated by reference — §1915.1018
1910.1025 Lead	Applies on vessels and on shore for lead; incorporated by reference — §1915.1025
1910.1027 Cadmium	Applies on vessels and on shore for cadmium; incorporated by reference — §1915.1027
1910.1028 Benzene	Applies on vessels and on shore for benzene; incorporated by reference — §1915.1028
1910.1029 Coke oven emissions	Applies on vessels and on shore for coke oven emissions
1910.1044 1,2-dibromo-3-chloropropane	Applies on vessels and on shore for 1, 2-dibromo-3-chloropropane; incorporated by reference — §1915.1044
1910.1045 Acrylonitrile	Applies on vessels and on shore for acrylonitrile; incorporated by reference — §1915.1045
1910.1047 Ethylene oxide	Applies on vessels and on shore for ethylene oxide; incorporated by reference — §1915.1047
1910.1048 Formaldehyde	Applies on vessels and on shore for formaldehyde; incorporated by reference — §1915.1048

General Industry Standards	Maritime Industry Applicability of General Industry Standards
1910.1050 Methylenedianiline	Applies on vessels and on shore for methylenedianiline; incorporated by reference — §1915.1050
1910.1051 1,3-Butadiene	Applies on vessels and on shore for 1,3-Butadiene
1910.1052 Methylene Chloride	Applies on vessels and on shore for methylene chloride; incorporated by reference — §1915.1052
1910.1200 Hazard Communication	Applies on vessels and on shore for hazard communication; incorporated by reference — §1915.1200
1910.1450 Occupational exposure to hazardous chemicals in laboratories	Applies on vessels and on shore for occupational exposure to hazardous chemicals in laboratories; incorporated by reference — §1915.1450

Asbestos – §1915.1001

The revised Hazard Communication rule also included updates to §1915.1001, paragraphs (i)(3), (k)(7), and (k)(8). New requirements include the expectation that employers will ensure that contaminated clothing for transport are sealed and labeled appropriately (§1915.1001(i)(3)).

Further, in §1915.1001(k)(7), formerly §1915.1001(k)(8), the required warnings to be displayed on the labels of bags or containers that hold protective clothing, equipment, scrap, waste, and debris have been adjusted slightly. Previously labels were required to bear the warning "CANCER AND LUNG DISEASE HAZARD" as one of four necessary warning statements (see 1915.1001(k)(7)(iii)). Now labels have been revised and two parts of the required label are "MAY CAUSE CANCER" and "CAUSES DAMAGE TO LUNGS." The new language takes effect June 1, 2015. Additionally, the same revision was made to warning signs that demarcate regulated areas under §1915.1001(k)(8)(ii), previously §1915.1001(k)(7)(ii)(A). However, employers are not required to make this change until June 1, 2016.

Also, in §1915.1001(k)(8)(iii), previously §1915.1001(k)(7)(ii)(B), where respirators must be worn, the signage must state "WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA." Employers have until June 1, 2016, to implement this change.

Chromium (VI) – §1915.1026

The revised Hazard Communication rule also made changes to §1915.1026, paragraphs (g)(2)(iv) and (j)(1). Where bags or containers of contaminated protective clothing or equipment are removed from change rooms for laundering, cleaning, maintenance, or disposal, they must be labeled in accord with the requirements of the Hazard Communication standard — §1910.1200 (§1915.1026(g)(2)(iv)). While this requirement has not changed, the new provision includes the expectation that ultimate responsibility lies with the employer.

New to paragraph (j)(1), employers must ensure each employee has the following:

1. Access to labels on containers of chromium (VI) and SDSs;
2. Training in accord with §1910.1200, as well as the requirements contained in paragraph (j)(2); and
3. Knowledge of the hazards associated with chromium (VI) that include at least cancer, skin sensitization, and eye irritation.

Table 2: 29 CFR Part 1917 – Marine Terminals

General Industry Standards	Maritime Industry Applicability of General Industry Standards
1910 Subpart Z Toxic and Hazardous Substances	Applies to marine cargo handling activities **except** for: • When a substance or cargo is contained within a sealed, intact means of packaging or containment compliant with Department of Transportation or International Maritime Organization requirements; • Bloodborne pathogens; • Carbon monoxide (See §1917.24(a)); • Hydrogen sulfide (See §1917.73(a)(2)); and • Hexavalent chromium (See §1915.1026).
1910.1200 Hazard Communication	Applies for hazard communication; incorporated by reference in §1917.28 (§1917.1(a)(2)(vi)). However, facilities used solely for bulk storage, handling and transfer of flammable, non-flammable and combustible liquids and gases are exempt from §1910.1200 requirements (§1917.1(a)(1)(i)).[1]

Table 3: 29 CFR Part 1918 – Longshoring

General Industry Standards	Maritime Industry Applicability of General Industry Standards
1910 Subpart Z Toxic and Hazardous Substances	Applies to marine cargo handling activities **except** for: • When a substance or cargo is contained within a sealed, intact means of packaging or containment compliant with U.S. Department of Transportation or International Maritime Organization requirements;; • Bloodborne pathogens; • Carbon monoxide (See §1918.94(a)); • Hydrogen sulfide (See §1918.94(f)); and • Hexavalent chromium (See §1915.1026).
1910.1200 Hazard Communication	Applies for hazard communication; incorporated by reference in §1918.90 (§1918.1(b)(4)).

Reporting and Recordkeeping

An accurate record of any measurements taken to monitor worker exposure and medical services (consultations, exams, tests, and written physician opinions) must be accurately recorded. Further, such records must be preserved and maintained for at least the duration of the worker's employment plus 30 years (29 CFR 1910.1020(d)(1)(i)).

[1] **Handling of Dangerous Cargo at Waterfront Facilities (Marine Terminals).** Under Section 4(b)(1) of the OSH Act, OSHA has no authority over a working condition if another federal agency has exercised statutory authority over that working condition. Pursuant to 33 U.S.C. Section 1231, a provision of the Ports and Waterways Safety Act, the Coast Guard has promulgated regulations (33 CFR Part 126) dealing with working conditions for the loading and discharging of vessels at "designated waterfront facilities" involving the handling and storage of "dangerous cargo," "designated dangerous cargo," or "cargo of a particular hazard."

Further, pursuant to this same section, the Coast Guard has promulgated regulations (33 CFR Part 154) for working conditions involving facilities capable of transferring oil or other hazardous liquids or gases, in bulk, to or from a vessel (see 29 CFR Part 1917.1(a)(1)(i)). "In bulk" is defined by the U. S. Coast Guard as 250 barrels or more, where a barrel holds 42 U.S. gallons (i.e., 250 barrels = 10,500 U.S. gallons). If the cargo handled at the "designated waterfront facility" is of the type specified in these Coast Guard regulations (33 CFR Parts 126 and 154), then OSHA authority is preempted with respect to those hazards addressed by those regulations (e.g., fire, explosion and toxic hazards). All other working conditions at the facility are subject to OSHA regulation (such as activities related to production, manufacturing, construction, ship repair including tank cleaning operations, and the movement of general cargo).

Safety Data Sheets (SDSs)

Under the revised standard, chemical manufacturers, distributors, or importers are required to provide SDSs (formerly material safety data sheets), for all hazardous chemicals. SDSs must present information on these chemicals in a user-friendly, 16-section format, containing the following information:

Section 1 - Identification;
Section 2 - Hazard(s) identification;
Section 3 - Composition/information on ingredients;
Section 4 - First-aid measures;
Section 5 - Firefighting measures;
Section 6 - Accidental release measures;
Section 7 - Handling and storage;
Section 8 - Exposure controls/personal protection;
Section 9 - Physical and chemical properties;
Section 10 - Stability and reactivity;
Section 11 - Toxicological information;
Section 12 - Ecological information;
Section 13 - Disposal considerations;
Section 14 - Transport information;
Section 15 - Regulatory information; and
Section 16 - Other information, including date of preparation or last revision.

OSHA requires that Sections 12 through 15 be present on each SDS; however, the agency is not enforcing the content of these sections. Appendix D of §1910.1200 outlines the information that must be present in each section.

SDSs must be readily accessible to workers for all hazardous chemicals in their workplace. There are a number of ways this can be accomplished. For example, employers may keep SDSs in a binder or on a computer. Regardless of the method used, employees must have immediate access to the information when needed without leaving their work area and a back-up system must be available for immediate access in case of power outage or other emergency. Employers may want to designate a person or group as responsible for obtaining and maintaining SDSs. Where hazardous chemicals are received without an SDS, the employer or its representative must make a good-faith effort to obtain the SDS.

Whenever chemical manufacturers, importers, or employers responsible for preparing the SDS become aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, the new information must be added to the SDS within three months. Labels must be updated within six months of becoming aware of significant information regarding the hazards of a chemical.

Labels

Starting on June 1, 2015, all labels on incoming containers of hazardous chemicals from manufacturers and importers must have pictogram(s), a signal word, hazard and precautionary statements, the product identifier, and supplier identification (see OSHA *QuickCard*: *Hazard Communication Standard Labels*). However, employers may receive containers with HCS 1994 compliant labels from distributors until December 1, 2015.

Pictograms are symbols used to communicate specific information about the hazards of a chemical. There are nine pictograms under the GHS used to convey the health, physical, and environmental hazards of a chemical; OSHA has adopted all of these pictograms except for the environmental pictogram. These pictograms are depicted below.

Pictograms

Health Hazard  • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	**Flame**  • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	**Exclamation Mark**  • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder  • Gases Under Pressure	**Corrosion**  • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals	**Exploding Bomb**  • Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle  • Oxidizers	**Environment** (Non-Mandatory)  • Aquatic Toxicity	**Skull and Crossbones**  • Acute Toxicity (fatal or toxic)

For secondary or in-house containers, the employer may either provide all of the required information that is on the label from the chemical manufacturer, or the product identifier and words, pictures, symbols or a combination thereof, which provide at least general information regarding the chemical hazards, and which, in combination with other information immediately available to workers, provide specific information regarding the hazards of the chemicals.

Information and Training

Workers must be trained on hazardous chemicals that they may be exposed to during work in a manner and language that they can understand. At a minimum, training must be conducted at the time of initial assignment to the work area, and whenever a new hazard is introduced.

The topics of training to be covered must, at a minimum, include:

- Detection of hazardous chemicals (e.g., visual appearance, odor, monitoring devices);
- Effects of hazardous chemical exposure that cover physical, health, asphyxiation, combustible dust, pyrophoric gas, and hazards not otherwise classified;
- Worker protection measures (e.g., work practices, emergency procedures, personal protective equipment); and
- Detailed overview of the employer's written hazard communication program, including an explanation of the labels received on shipped containers and SDS sections. Employers must train workers on HCS 2012 label elements and SDS format by December 1, 2013.

Workers must also be informed of the requirements of the HCS, any operations in their work area where hazardous chemicals are present, and the location and availability of the written hazard communication program, including the required lists of hazardous chemicals and SDSs.

Help for Employers

For more information on the HCS, as well as common and logical approaches to training and communicating hazard information on labels and SDSs, see the OSHA webpage at www.osha.gov/dsg/hazcom.

OSHA's On-site Consultation Program offers free and confidential advice to small and medium-sized businesses in all states across the country, with priority given to high-hazard worksites. On-site Consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing safety and health management systems. To locate the OSHA On-site Consultation Program nearest you, call 1-800-321-6742 (OSHA) or visit www.osha.gov/dcsp/smallbusiness.

Note: States with OSHA-approved state plans may have additional requirements. For more information, please visit: www.osha.gov/dcsp/osp/statestandards.html.

Disclaimer: This OSHA Fact Sheet provides a general overview of the requirements of the Hazard Communication standard applicable to the maritime industry. It does not alter or determine compliance responsibilities in the standard or the Occupational Safety and Health Act of 1970. Since interpretations and enforcement policy may change over time, the reader should consult current OSHA interpretations and decisions by the Occupational Safety and Health Review Commission and the courts for additional guidance on OSHA compliance requirements.

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DSG FS-3694 11/2013

OSHA® BRIEF

Hazard Communication Standard: Safety Data Sheets

The Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012, requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards. The information contained in the SDS is largely the same as the MSDS, except now the SDSs are required to be presented in a consistent user-friendly, 16-section format. This brief provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDSs.

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The information contained in the SDS must be in English (although it may be in other languages as well). In addition, OSHA requires that SDS preparers provide specific minimum information as detailed in Appendix D of 29 CFR 1910.1200. The SDS preparers may also include additional information in various section(s).

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., fire fighting). This information should be helpful to those that need to get the information quickly. Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

The SDS must also contain Sections 12 through 15, to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), but OSHA will not enforce the content of these sections because they concern matters handled by other agencies.

A description of all 16 sections of the SDS, along with their contents, is presented below:

Section 1: Identification

This section identifies the chemical on the SDS as well as the recommended uses. It also provides the essential contact information of the supplier. The required information consists of:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier).

Section 2: Hazard(s) Identification

This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category[1]).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or be a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.
- For a mixture that contains an ingredient(s) with unknown toxicity, a statement describing how much (percentage) of the mixture consists of ingredient(s) with unknown acute toxicity. Please note that this is a total percentage of the mixture and not tied to the individual ingredient(s).

Section 3: Composition/Information on Ingredients

This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed. The required information consists of:

Substances

- Chemical name.
- Common name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.

Mixtures

- Same information required for substances.
- The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are:
  - Present above their cut-off/concentration limits or
  - Present a health risk below the cut-off/concentration limits.
- The concentration (exact percentages) of each ingredient must be specified except concentration ranges may be used in the following situations:
  - A trade secret claim is made,
  - There is batch-to-batch variation, or
  - The SDS is used for a group of substantially similar mixtures.

Chemicals where a trade secret is claimed

- A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

[1] Chemical, as defined in the HCS, is any substance, or mixture of substances.

Section 4: First-Aid Measures

This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

Section 5: Fire-Fighting Measures

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.
- Recommendations on special protective equipment or precautions for firefighters.

Section 6: Accidental Release Measures

This section provides recommendations on the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment. It may also include recommendations distinguishing between responses for large and small spills where the spill volume has a significant impact on the hazard. The required information may consist of recommendations for:

- Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes, and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing.
- Methods and materials used for containment (e.g., covering the drains and capping procedures).
- Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning or vacuuming; adsorbent materials; and/or equipment required for containment/clean up).

Section 7: Handling and Storage

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for safe handling, including recommendations for handling incompatible chemicals, minimizing the release of the chemical into the environment, and providing advice on general hygiene practices (e.g., eating, drinking, and smoking in work areas is prohibited).
- Recommendations on the conditions for safe storage, including any incompatibilities. Provide advice on specific storage requirements (e.g., ventilation requirements).

Section 8: Exposure Controls/Personal Protection

This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure. The required information consists of:

- OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
- Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).
- Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals, such as personal protective equipment (PPE) (e.g., appropriate types of eye, face, skin or respiratory protection needed based on hazards and potential exposure).
- Any special requirements for PPE, protective clothing or respirators (e.g., type of glove material, such as PVC or nitrile rubber gloves; and breakthrough time of the glove material).

Section 9: Physical and Chemical Properties

This section identifies physical and chemical properties associated with the substance or mixture. The minimum required information consists of:

- Appearance (physical state, color, etc.);
- Odor;
- Odor threshold;
- pH;
- Melting point/freezing point;
- Initial boiling point and boiling range;
- Flash point;
- Evaporation rate;
- Flammability (solid, gas);
- Upper/lower flammability or explosive limits;
- Vapor pressure;
- Vapor density;
- Relative density;
- Solubility(ies);
- Partition coefficient: n-octanol/water;
- Auto-ignition temperature;
- Decomposition temperature; and
- Viscosity.

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for that chemical property. Manufacturers may also add other relevant properties, such as the dust deflagration index (Kst) for combustible dust, used to evaluate a dust's explosive potential.

Section 10: Stability and Reactivity

This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other. The required information consists of:

Reactivity

- Description of the specific test data for the chemical(s). This data can be for a class or family of the chemical if such data adequately represent the anticipated hazard of the chemical(s), where available.

Chemical stability

- Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in storage and being handled.
- Description of any stabilizers that may be needed to maintain chemical stability.
- Indication of any safety issues that may arise should the product change in physical appearance.

Other

- Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur.
- List of all conditions that should be avoided (e.g., static discharge, shock, vibrations, or environmental conditions that may lead to hazardous conditions).
- List of all classes of incompatible materials (e.g., classes of chemicals or specific substances) with which the chemical could react to produce a hazardous situation.
- List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating. (Hazardous combustion products should also be included in Section 5 (Fire-Fighting Measures) of the SDS.)

Section 11: Toxicological Information

This section identifies toxicological and health effects information or indicates that such data are not available. The required information consists of:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
- Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
- The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.
- Description of the symptoms. This description includes the symptoms associated with exposure to the chemical including symptoms from the lowest to the most severe exposure.
- Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA.

Section 12: Ecological Information (non-mandatory)

This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment. The information may include:

- Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available (e.g., acute or chronic aquatic toxicity data for fish, algae, crustaceans, and other plants; toxicity data on birds, bees, plants).
- Whether there is a potential for the chemical to persist and degrade in the environment either through biodegradation or other processes, such as oxidation or hydrolysis.
- Results of tests of bioaccumulation potential, making reference to the octanol-water partition coefficient (K_{ow}) and the bioconcentration factor (BCF), where available.
- The potential for a substance to move from the soil to the groundwater (indicate results from adsorption studies or leaching studies).
- Other adverse effects (e.g., environmental fate, ozone layer depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and/or global warming potential).

Section 13: Disposal Considerations (non-mandatory)

This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices. To minimize exposure, this section should also refer the reader to Section 8 (Exposure Controls/Personal Protection) of the SDS. The information may include:

- Description of appropriate disposal containers to use.
- Recommendations of appropriate disposal methods to employ.
- Description of the physical and chemical properties that may affect disposal activities.
- Language discouraging sewage disposal.
- Any special precautions for landfills or incineration activities.

Section 14: Transport Information (non-mandatory)

This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea. The information may include:

- UN number (i.e., four-figure identification number of the substance)[2].
- UN proper shipping name[2].
- Transport hazard class(es)[2].
- Packing group number, if applicable, based on the degree of hazard[2].
- Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)).
- Guidance on transport in bulk (according to Annex II of MARPOL 73/78[3] and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)).
- Any special precautions which an employee should be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises (indicate when information is not available).

[2] Found in the most recent edition of the United Nations Recommendations on the Transport of Dangerous Goods.

[3] MARPOL 73/78 means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended.

Section 15: Regulatory Information (non-mandatory)

This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS. The information may include:

- Any national and/or regional regulatory information of the chemical or mixtures (including any OSHA, Department of Transportation, Environmental Protection Agency, or Consumer Product Safety Commission regulations).

Section 16: Other Information

This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.

Employer Responsibilities

Employers must ensure that the SDSs are readily accessible to employees for all hazardous chemicals in their workplace. This may be done in many ways. For example, employers may keep the SDSs in a binder or on computers as long as the employees have immediate access to the information without leaving their work area when needed and a back-up is available for rapid access to the SDS in the case of a power outage or other emergency. Furthermore, employers may want to designate a person(s) responsible for obtaining and maintaining the SDSs. If the employer does not have an SDS, the employer or designated person(s) should contact the manufacturer to obtain one.

References

OSHA, 29 CFR 1910.1200(g) and Appendix D.

United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), third revised edition, United Nations, 2009.

These references and other information related to the revised Hazard Communication Standard can be found on OSHA's Hazard Communication Safety and Health Topics page, located at: http://www.osha.gov/dsg/hazcom/index.html.

Disclaimer: This brief provides a general overview of the safety data sheet requirements in the Hazard Communication Standard (see 29 CFR 1910.1200(g) and Appendix D of 29 CFR 1910.1200). It does not alter or determine compliance responsibilities in the standard or the Occupational Safety and Health Act of 1970. Since interpretations and enforcement policy may change over time, the reader should consult current OSHA interpretations and decisions by the Occupational Safety and Health Review Commission and the courts for additional guidance on OSHA compliance requirements. Please note that states with OSHA-approved state plans may have additional requirements for chemical safety data sheets, outside of those outlined above. For more information on those standards, please visit: http://www.osha.gov/dcsp/osp/statestandards.html.

This is one in a series of informational briefs highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

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DSG BR-3514 2/2012

OSHA® BRIEF

Hazard Communication Standard: Labels and Pictograms

OSHA has adopted new hazardous chemical labeling requirements as a part of its recent revision of the Hazard Communication Standard, 29 CFR 1910.1200 (HCS), bringing it into alignment with the United Nations' Globally Harmonized System of Classification and Labelling of Chemicals (GHS). These changes will help ensure improved quality and consistency in the classification and labeling of all chemicals, and will also enhance worker comprehension. As a result, workers will have better information available on the safe handling and use of hazardous chemicals, thereby allowing them to avoid injuries and illnesses related to exposures to hazardous chemicals.

The revised HCS changes the existing Hazard Communication Standard (HCS/HazCom 1994[1]) from a performance-based standard to one that has more structured requirements for the labeling of chemicals. The revised standard requires that information about chemical hazards be conveyed on labels using quick visual notations to alert the user, providing immediate recognition of the hazards. Labels must also provide instructions on how to handle the chemical so that chemical users are informed about how to protect themselves.

The label provides information to the workers on the specific hazardous chemical. While labels provide important information for anyone who handles, uses, stores, and transports hazardous chemicals, they are limited by design in the amount of information they can provide. Safety Data Sheets (SDSs), which must accompany hazardous chemicals, are the more complete resource for details regarding hazardous chemicals. The revised standard also requires the use of a 16-section safety data sheet format, which provides detailed information regarding the chemical. There is a separate OSHA Brief on SDSs that provides information on the new SDS requirements.

All hazardous chemicals shipped after June 1, 2015, must be labeled with specified elements including pictograms, signal words and hazard and precautionary statements. However, manufacturers, importers, and distributors may start using the new labeling system in the revised HCS before the June 1, 2015 effective date if they so choose. Until the June 1, 2015 effective date, manufacturers, importers and distributors may maintain compliance with the requirements of HazCom 1994 or the revised standard. Distributors may continue to ship containers labeled by manufacturers or importers (but not by the distributor themselves) in compliance with the HazCom 1994 until December 1, 2015.

This document is designed to inform chemical receivers, chemical purchasers, and trainers about the label requirements. It explains the new labeling elements, identifies what goes on a label, and describes what pictograms are and how to use them.

Label Requirements

Labels, as defined in the HCS, are an appropriate group of written, printed or graphic informational elements concerning a hazardous chemical that are affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

The HCS requires chemical manufacturers, importers, or distributors to ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked with the following information: product identifier; signal word; hazard statement(s); precautionary

[1] Prior to the 2012 update, the Hazard Communication Standard had last been amended in 1994. 'HazCom 1994' refers to the version of the Hazard Communication Standard in effect directly prior to the 2012 revision, printed in the 1995 through 2011 versions of the Code of Federal Regulations. It is also available on OSHA's webpage.

statement(s); and pictogram(s); and name, address and telephone number of the chemical manufacturer, importer, or other responsible party.

Labels for a hazardous chemical must contain:

- Name, Address and Telephone Number
- Product Identifier
- Signal Word
- Hazard Statement(s)
- Precautionary Statement(s)
- Pictogram(s)

To develop labels under the revised HCS, manufacturers, importers and distributors must first identify and classify the chemical hazard(s). Appendices A, B, and C are all mandatory. The classification criteria for health hazards are in Appendix A and the criteria for physical hazards are presented in Appendix B of the revised Hazard Communication Standard. After classifying the hazardous chemicals, the manufacturer, importer or distributor then consults Appendix C to determine the appropriate pictograms, signal words, and hazard and precautionary statement(s), for the chemical label. Once this information has been identified and gathered, then a label may be created.

Label Elements
The HCS now requires the following elements on labels of hazardous chemicals:

- **Name, Address and Telephone Number** of the chemical manufacturer, importer or other responsible party.

- **Product Identifier** is how the hazardous chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the appropriate product identifier. The same product identifier must be both on the label and in section 1 of the SDS.

- **Signal Words** are used to indicate the relative level of severity of the hazard and alert the reader to a potential hazard on the label. There are only two words used as signal words, "Danger" and "Warning." Within a specific hazard class, "Danger" is used for the more severe hazards and "Warning" is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a "Danger" signal word and another warrants the signal word "Warning," then only "Danger" should appear on the label.

- **Hazard Statements** describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: "Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin." All of the applicable hazard statements must appear on the label. Hazard statements may be combined where appropriate to reduce redundancies and improve readability. The hazard statements are specific to the hazard classification categories, and chemical users should always see the same statement for the same hazards no matter what the chemical is or who produces it.

- **Precautionary Statements** describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling. There are four types of precautionary statements: prevention (to minimize exposure); response (in case of accidental spillage or exposure emergency response, and first-aid); storage; and disposal. For example, a chemical presenting a specific target organ toxicity (repeated exposure) hazard would include the following on the label: "Do not breathe dust/fume/gas/mist/vapors/spray. Get medical advice/attention if you feel unwell. Dispose of contents/container in accordance with local/regional/national and international regulations."

  A forward slash (/) designates that the classifier can choose one of the precautionary statements. In the example

above, the label could state, "Do not breathe vapors or spray. Get medical attention if you feel unwell. Dispose of contents in accordance with local/regional/national/international regulations." See Examples 1 and 2A of this document as an example.

In most cases, the precautionary statements are independent. However, OSHA does allow flexibility for applying precautionary statements to the label, such as combining statements, using an order of precedence or eliminating an inappropriate statement.

Precautionary statements may be combined on the label to save on space and improve readability. For example, "Keep away from heat, spark and open flames," "Store in a well-ventilated place," and "Keep cool" may be combined to read: "Keep away from heat, sparks and open flames and store in a cool, well-ventilated place." Where a chemical is classified for a number of hazards and the precautionary statements are similar, the most stringent statements must be included on the label. In this case, the chemical manufacturer, importer, or distributor may impose an order of precedence where phrases concerning response require rapid action to ensure the health and safety of the exposed person. In the self-reactive hazard category Types C, D, E or F, three of the four precautionary statements for prevention are:

- "Keep away from heat/sparks/open flame/hot surfaces. - No Smoking.";
- "Keep/Store away from clothing/…/ combustible materials";
- "Keep only in original container."

These three precautionary statements could be combined to read: "Keep in original container and away from heat, open flames, combustible materials and hot surfaces. - No Smoking."

Finally, a manufacturer or importer may eliminate a precautionary statement if it can demonstrate that the statement is inappropriate.

- **Supplementary Information.** The label producer may provide additional instructions or information that it deems helpful. It may also list any hazards not otherwise classified under this portion of the label. This section must also identify the percentage of ingredient(s) of unknown acute toxicity when it is present in a concentration of ≥1% (and the classification is not based on testing the mixture as a whole). If an employer decides to include additional information regarding the chemical that is above and beyond what the standard requires, it may list this information under what is considered "supplementary information." There is also no required format for how a workplace label must look and no particular format an employer has to use; however, it cannot contradict or detract from the required information.

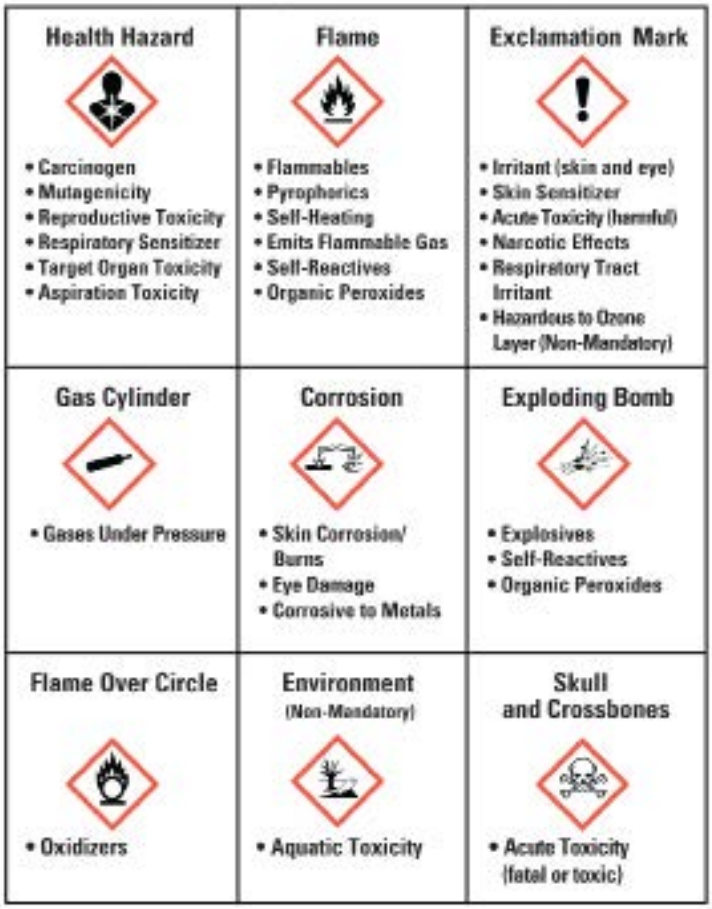
  An example of an item that may be considered supplementary is the personal protective equipment (PPE) pictogram indicating what workers handling the chemical may need to wear to protect themselves. For example, the Hazardous Materials Identification System (HMIS) pictogram of a person wearing goggles may be listed. Other supplementary information may include directions of use, expiration date, or fill date, all of which may provide additional information specific to the process in which the chemical is used.

- Pictograms are graphic symbols used to communicate specific information about the hazards of a chemical. On hazardous chemicals being shipped or transported from a manufacturer, importer or distributor, the required pictograms consist of a red square frame set at a point with a black hazard symbol on a white background, sufficiently wide to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is not permitted on the label.

  The pictograms OSHA has adopted improve worker safety and health, conform with the GHS, and are used worldwide.

While the GHS uses a total of nine pictograms, OSHA will only enforce the use of eight. The environmental pictogram is not mandatory but may be used to provide additional information. Workers may see the ninth symbol on a label because label preparers may choose to add the environment pictogram as supplementary information. Figure 1 shows the symbol for each pictogram, the written name for each pictogram, and the hazards associated with each of the pictograms. Most of the symbols are already used for transportation and many chemical users may be familiar with them.

Figure 1: Pictograms and Hazards



It is important to note that the OSHA pictograms do not replace the diamond-shaped labels that the U.S. Department of Transportation (DOT) requires for the transport of chemicals, including chemical drums, chemical totes, tanks or other containers. Those labels must be on the external part of a shipped container and must meet the DOT requirements set forth in 49 CFR 172, Subpart E. If a label has a DOT transport pictogram, Appendix C.2.3.3 states that the corresponding HCS pictogram shall not appear. However, DOT does not view the HCS pictogram as a conflict and for some international trade both pictograms may need to be present on the label. Therefore, OSHA intends to revise C.2.3.3. In the meantime, the agency will allow both DOT and HCS pictograms for the same hazard on a label. While the DOT diamond label is required for all hazardous chemicals on the outside shipping containers, chemicals in smaller containers inside the larger shipped container do not require the DOT diamond but do require the OSHA pictograms. (See Example 2.)

Labels must be legible, in English, and prominently displayed. Other languages may be displayed in addition to English. Chemical manufacturers, importers, and distributors who become newly aware of any significant information regarding the hazards of a chemical must revise the label within six months.

Employer Responsibilities

Employers are responsible for maintaining the labels on the containers, including, but not limited to, tanks, totes, and drums. This means that labels must be maintained on chemicals in a manner which continues to be legible and the pertinent information (such as the hazards and directions for use) does not get defaced (i.e., fade, get washed off) or removed in any way.

The employer is not responsible for updating labels on shipped containers, even if the shipped containers are labeled under HazCom 1994. The employer must relabel items if the labels are removed or defaced. However, if the employer is aware of newly-identified hazards that are not disclosed on the label, the employer must ensure that the workers are aware of the hazards as discussed below under workplace labels.

Workplace Labels

OSHA has not changed the general requirements for workplace labeling. Employers have the option to create their own workplace labels. They can either provide all of the required information that is on the

label from the chemical manufacturer or, the product identifier and words, pictures, symbols or a combination thereof, which in combination with other information immediately available to employees, provide specific information regarding the hazards of the chemicals.

If an employer has an in-plant or workplace system of labeling that meets the requirements of HazCom 1994, the employer may continue to use this system in the workplace as long as this system, in conjunction with other information immediately available to the employees, provides the employees with the information on all of the health and physical hazards of the hazardous chemical. This workplace labeling system may include signs, placards, process sheets, batch tickets, operating procedures, or other such written materials to identify hazardous chemicals. Any of these labeling methods or a combination thereof may be used instead of a label from the manufacturer, importer or distributer as long as the employees have immediate access to all of the information about the hazards of the chemical. Workplace labels must be in English. Other languages may be added to the label if applicable.

If the employer chooses to use the pictograms that appear in Appendix C on the workplace (or in-plant) labels, these pictograms may have a black border, rather than a red border.

Employers may use additional instructional symbols that are not included in OSHA's HCS pictograms on the workplace labels. An example of an instructional pictogram is a person with goggles, denoting that goggles must be worn while handling the given chemical. Including both types of pictograms on workplace labels is acceptable. The same is true if the employer wants to list environmental pictograms or PPE pictograms from the HMIS to identify protective measures for those handling the chemical.

Employers may continue to use rating systems such as National Fire Protection Association (NFPA) diamonds or HMIS requirements for workplace labels as long as they are consistent with the requirements of the Hazard Communication Standard and the employees have immediate access to the specific hazard information as discussed above. An employer using NFPA or HMIS labeling must, through training, ensure that its employees are fully aware of the hazards of the chemicals used.

If an employer transfers hazardous chemicals from a labeled container to a portable container that is only intended for immediate use by the employee who performs the transfer, no labels are required for the portable container.

Sample Labels

The following examples demonstrate how a manufacturer or importer may display the appropriate information on the label. As mentioned above, once the manufacturer determines the classification of the chemical (class and category of each hazard) using Appendices A and B, it would determine the required pictograms, signal words, hazard statements, and precautionary statements using Appendix C. The final step is to put the information on the label.

The examples below show what a sample label might look like under the revised HCS requirements. The examples break the labeling out into "steps" to show the order of information gathering and how label creation occurs. Step 1 is performing classification; step 2 is gathering full label information; and step 3 is creating the label.

These examples are for informational purposes only and are not meant to represent the only labels manufacturers, importers and distributors may create for these hazards.

Example 1: This example demonstrates a simple label.

The Substance:
HS85
Batch Number: 85L6543

Step 1: Perform Classification
Class: Acute Oral Toxicity; Category 4

Step 2: Gather Labeling Information
Pictograms:

Signal Word:
WARNING

Hazard Statements:
Harmful if Swallowed

Precautionary Statements:
Prevention:
- Wash hands and face thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Response:
- If swallowed: Call a doctor if you feel unwell.[2]
- Rinse mouth

Storage:
None specified

Disposal:
- Dispose of contents/container in accordance with local/regional/national/international regulations.[3]

Step 3: Create the Label
Putting together the above information on HS85, a label might list the following information:

Example 1: HS85 Label

HS85
Batch number: 85L6543

Warning
Harmful if swallowed

Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Dispose of contents/container in accordance with local, state and federal regulations.

First aid:
If swallowed: Call a doctor if you feel unwell. Rinse mouth.

GHS Example Company, 123 Global Circle, Anyville, NY 130XX Telephone (888) 888-8888

[2] The manufacturer of this chemical determined that calling a doctor was the most appropriate emergency medical advice; therefore, it is listed as part of the first-aid procedures.
[3] The downstream users must familiarize themselves with the proper disposal methods in accordance with local, regional, state and federal regulations. It is impractical to expect the label preparer to list all potential regulations that exist.

Example 2: This example demonstrates a more complex label.

Example 2 is for a substance that is a severe physical and health hazard. For shipping packages of chemicals that will be transported in the United States (i.e., drums, totes, tanks, etc.), the U.S. DOT requires a DOT label(s) on the outside container(s) for hazardous chemicals. Two versions of this label are presented below to demonstrate the difference between an OSHA label with pictograms from the HCS and a DOT label required for transport of a shipping container.

The Substance:
OXI252 (disodiumflammy)
CAS number: 111-11-11xx

Step 1: Perform Classification

Class: Oxidizing Solid, Category 1
Class: Skin Corrosive, Category 1A

Step 2: Gather Labeling Information

Pictograms:

Signal Word:
DANGER

Hazard Statements:

- May cause fire or explosion; strong oxidizer
- Causes severe skin burns and eye damage

Precautionary Statements:
Prevention:

- Keep away from heat.
- Keep away from clothing and other combustible materials.
- Take any precaution to avoid mixing with combustibles.
- Wear protective neoprene gloves, safety goggles and face shield with chin guard.
- Wear fire/flame resistant clothing.
- Do not breathe dust or mists.
- Wash arms, hands and face thoroughly after handling.

Response:

- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash contaminated clothing before reuse.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- Immediately call poison center.[4]

Specific Treatment:
Treat with doctor-prescribed burn cream.[5]

In case of fire:
Use water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Storage:
Store locked up.

Disposal:

- Dispose of contents/container in accordance with local/regional/national/international regulations.[3]

Step 3: Create the Label

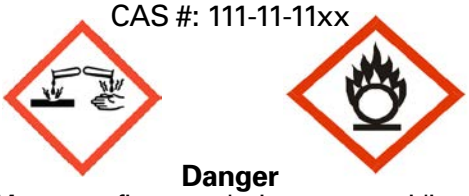
Putting together the above information on OXI252, a label might list the following information:

[4] In this example, the manufacturer determined that calling a poison control center is the most appropriate emergency medical advice.

[5] Not all SDSs will have direction for "specific treatment" on the label. This is only if the manufacturer specifically notes a certain treatment that needs to be used to treat a worker who has been exposed to this chemical.

Example 2A: OXI252 Label inner package label with OSHA pictograms

OXI252
(disodiumflammy)
CAS #: 111-11-11xx



Danger
May cause fire or explosion; strong oxidizer
Causes severe skin burns and eye damage

Keep away from heat. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Wear protective neoprene gloves, safety goggles and face shield with chin guard. Wear fire/flame resistant clothing. Do not breathe dust or mists. Wash arms, hands and face thoroughly after handling. Store locked up. Dispose of contents and container in accordance with local, state and federal regulations.

First aid:
IF ON SKIN (or hair) or clothing[6]: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Immediately call poison center.
Specific Treatment: Treat with doctor-prescribed burn cream.

Fire:
In case of fire: Use water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Great Chemical Company, 55 Main Street, Anywhere, CT 064XX Telephone (888) 777-8888

Example 2B: OXI252 Label meeting DOT requirements for shipping[7]

OXI252
(disodiumflammy)
CAS #: 111-11-11xx

Danger
May cause fire or explosion; strong oxidizer
Causes severe skin burns and eye damage

Keep away from heat. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Wear protective neoprene gloves, safety goggles and face shield with chin guard. Wear fire/flame resistant clothing. Do not breathe dust or mists. Wash arms, hands and face thoroughly after handling. Store locked up. Dispose of contents and container in accordance with local, state and federal regulations.

First aid:
IF ON SKIN (or hair) or clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Immediately call poison center.
Specific Treatment: Treat with doctor-prescribed burn cream.

Fire:
In case of fire: Use water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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[6] There are occasions where label preparers may combine statements on the label. In this case the similar statements were combined and the most stringent were listed. For example, the first-aid pre-cautionary statements were combined for exposure to skin, hair and clothing.

[7] DOT Labels must comply with the size require-ments presented in 49 CFR 172.

For more detailed information about labels and Safety Data Sheets (SDSs) under the revised Hazard Communication Standard, please refer to refer to 29 CFR 1910.1200 - paragraphs (f) and (g), and Appendix C.

The revised Hazard Communication Standard and additional guidance materials are available on OSHA's Hazard Communication page, located at: www.osha.gov/dsg/hazcom/index.html.

Disclaimer: This OSHA Brief provides a general overview of the label requirements in the Hazard Communication Standard (see 29 CFR 1910.1200(f) and Appendix C of 29 CFR 1910.1200). It does not alter or determine compliance responsibilities in the standard or the Occupational Safety and Health Act of 1970. Since interpretations and enforcement policy may change over time, the reader should consult current OSHA interpretations and decisions by the Occupational Safety and Health Review Commission and the courts for additional guidance on OSHA compliance requirements.

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DSG BR-3636 2/2013

OSHA®
Fact Sheet

Longshoring in Marine Terminals

Safely Performing Hot Work on Hollow or Enclosed Structures

OSHA requires employers to provide workplaces that are free of recognized hazards. Hot work performed on hollow or enclosed structures in marine terminals can present hazards to marine terminal workers. OSHA defines hot work to include riveting, welding, flame cutting, or similar fire- or spark-producing operations. Requirements for hot work are in 29 CFR 1917.152.

Hollow or Enclosed Structures

Hollow or enclosed structures are objects on which marine terminal employees work, but that are not large enough for them to enter. These structures are not vented to the atmosphere and may be filled with foam or preservatives to prevent corrosion. Hollow or enclosed structures in marine terminals come in a variety of sizes and shapes. Examples include, but are not limited to, drums, inaccessible voids, pipe stanchions, booms, lampposts, crane pedestals, crane-portal beams, doubler plates, railings, mooring bitts and bollards, vents, and container frames. Requirements for performing hot work on or in tanks or confined spaces, including testing the atmosphere in confined spaces, are in 29 CFR 1917.152.

Explosion and Fire Hazards

During hot work on hollow or enclosed structures, employers must take precautions to protect workers from exposure to a range of hazards such as flammable or toxic gases, liquids, or residues; combustible preservatives; saltwater; fuel oils; solvents, degreasers or cleaning chemicals; and high-pressure or vacuum effects due to fluctuating temperatures. However, employers must pay particular attention to these known hazards:

- **Explosive atmosphere –** This hazard can be created when there is a presence of flammable gases or dust in the air and an ignition source such as hot work is introduced.

Note: States with OSHA-approved state plans may have different requirements. See www.osha.gov.

- **Flammable material –** This hazard can be created when insulating foam or other commonly used materials catch fire and release noxious gases when exposed to an ignition source such as hot work.

Sources of Flammable or Explosive Atmospheres

Flammable or explosive atmospheres in hollow or enclosed structures can result from many sources, including:

- Cargo containers may contain various types of chemicals. The structure of the container or the container coating can absorb chemicals and emit toxic gases.
- As a result, when a worker removes a stored product from, or cleans the container, the toxic gases in the container may create a flammable or explosive atmosphere.

Control Measures Required for Hot Work on Hollow or Enclosed Structures

Prior to starting hot work operations, employers must:

- **Have a designated person test the atmosphere in a hollow or enclosed structure to determine that the atmosphere is not hazardous, 29 CFR 1917.152(c)(8)(i). [An NFPA-certified Marine Chemist may perform the tasks assigned to a designated person.]**
- **Ensure that suitable fire-extinguishing equipment is immediately available and ready for use at all times, 29 CFR 1917.152(c)(3).**
- **Train workers involved in hot work operations on the fire hazards of hot work and the use of firefighting equipment, 29 CFR 1917.152(c)(4).**
- **Ensure that workers wear proper personal protective equipment (PPE), clothing, gloves, and eye protection during hot work operations, 29 CFR 1917, Subpart E.**
- **If normal fire-prevention precautions are not sufficient, assign additional personnel to guard against fires during hot work and for a sufficient time after completing the work, 29 CFR 1917.152(c)(4).**
- **Make safe any hollow structure that previously contained flammable or combustible substances by cleaning the structure or filling it with water and then ventilating the structure, 29 CFR 1917.152(c)(8)(i).**
- **Open the hollow structure to release pressure that builds up during heat application, 29 CFR 1917.152(c)(8)(ii).**

- Rusting metals caused by oxidation can create an explosive atmosphere due to the release of hydrogen gas.
- Carbon monoxide gas released when welding on a hollow or enclosed structure can accumulate to a high enough concentration to become explosive.
- Flammable liquefied gas may leak from cargo containers, such as reefer units. If the flammable liquefied gas enters a hollow or enclosed structure, an explosion can occur when an ignition source such as welding is present.

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see OSHA's Workers page.

How to Contact OSHA

For questions or to get information or advice, to report an emergency, fatality, inpatient hospitalization, amputation, or loss of an eye, or to file a confidential complaint, contact your nearest OSHA office, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

For assistance, contact us. We can help. It's confidential.

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: 1-877-889-5627.

DSG FS-3732 05/2014

OSHA® QUICK CARD™

Safe Plugging and Unplugging Reefer Units in Longshoring and Marine Terminals

Refrigerated cargo containers are commonly referred to as "reefer units." Connecting (plugging) and disconnecting (unplugging) them from an electrical power supply poses a significant safety hazard. Employers must protect workers from burn, electrical shock and electrical hazards (arc-flash and arc-blast) when the workers are plugging and unplugging reefer units on board ships and in marine terminals. Employers should provide toolbox safety talks to ensure that workers are aware of hazards associated with plugging and unplugging reefer units.

SAFE WORK PRACTICES

Plugs, Cords and Power Supply (see 29 CFR 1910, Subpart S)

Do not plug in reefer units if wires are exposed.

- **Employers** must ensure that all live parts on reefer units are suitably guarded, isolated, or insulated to protect workers from accidental contact.
- **Shut off the power supply controls** before plugging or unplugging a reefer unit.
- Workers should immediately report all damaged or live parts to the foreperson or supervisor. Power cords and receptacles must be free of damage.
- **Do not** step on cords or cables.
- Ensure that plugs are clean and dry before plugging them into a receptacle. Use caution when plugging or unplugging reefers during rain or snow.

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA 3652-06 2013

OSHA® QUICK CARD™

Safe Access

- **Employers** must provide safe access for workers to retrieve cords on reefers in marine terminals or when stowed on vessels.
- **Employers** must ensure that portable ladders are in safe condition and secured in place prior to use.
- Workers should stay within the safety rail and should not stand on rails or reach over rails to perform duties.
- When working on a ladder or stairway, workers can maintain a stable position by staying between the side rails of the ladder or stairway.
- Remain alert — be aware that the fans in reefer units may start up at any time, which may startle nearby workers, as well as blow dust or debris into the work area and expose workers to impact or respiratory hazards.

Remember

- **Make sure that the power is off before plugging or unplugging reefer units.**
- **Report all damaged equipment.**
- **Wear the proper PPE, including gloves, goggles and hearing protection.**
- **Access elevated reefer units safely.**

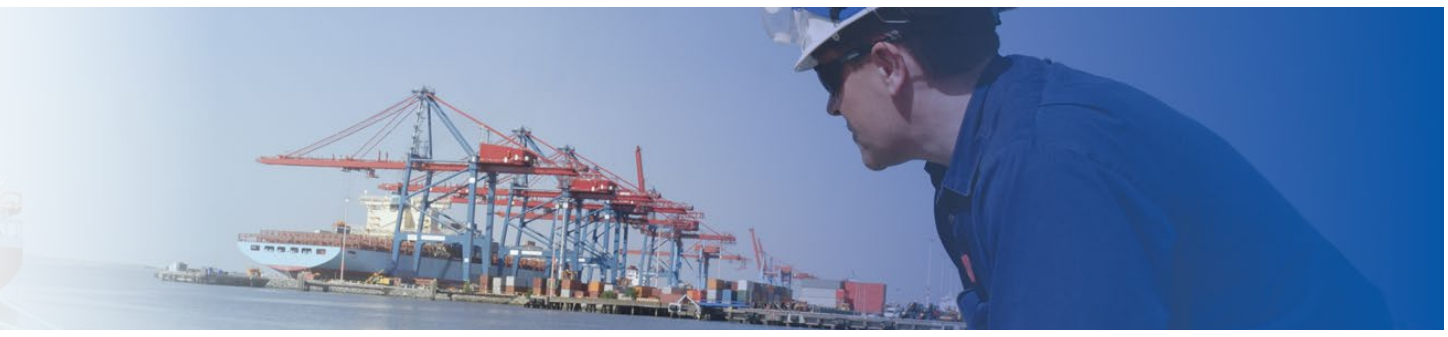
For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

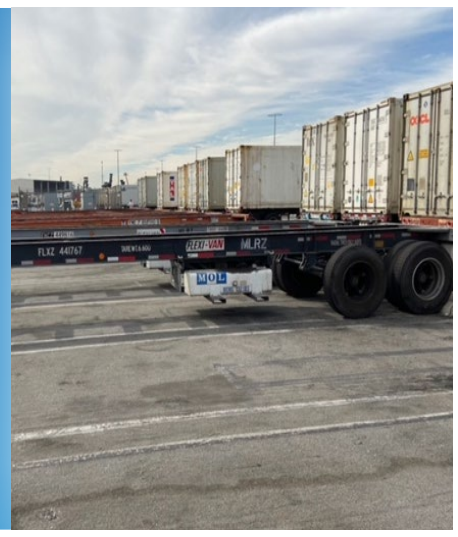
OSHA®
Occupational Safety and Health Administration



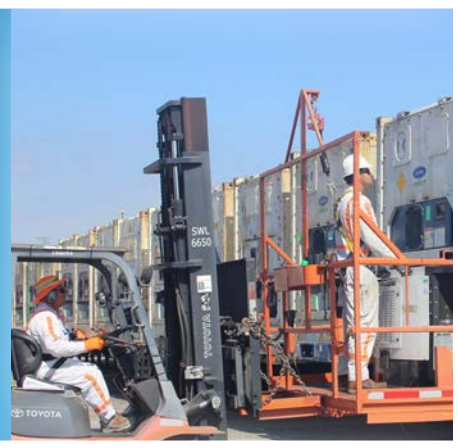
Five Ways to Stay Safe When Working on Refrigerated Containers "Reefers" in Marine Terminals

1 Check that cords and receptacles are clean, dry, and in good condition before energizing reefers.

2 Recognize hazards, such as electric shock, carbon monoxide gas, and fire, and know how to safely mount and dismount nose-and belly-mount generator sets.

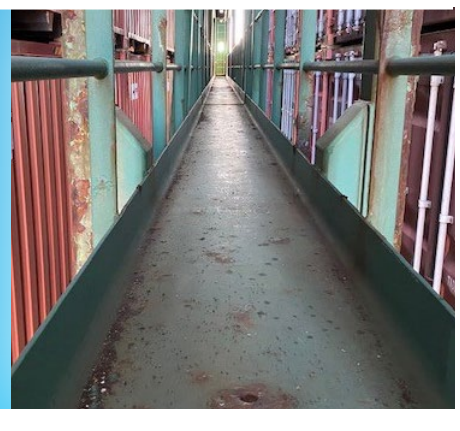


3 Operate forklifts safely and observe speed restrictions. Maintain equipment and train operators according to 29 CFR 1910.178.



4 Inspect ladders, forklift man baskets and other lifting devices prior to use or operation.

5 Keep walkways and access areas clear and dry to prevent slips, trips, and falls.



OSHA 4163-11 2021

From:	Crystal Torres
To:	Polycart, Johanna
Cc:	marinewaste@bellsouth.net
Subject:	Re: Compliance Assistance Meeting Follow-Up
Date:	Tuesday, June 20, 2023 1:50:01 PM
Attachments:	OSHA 10-Hr Student Manual - Marine Terminals (1) (1).pdf DEP Form 62-710.901- Used oil & used filters record keeping form.pdf

Good Afternoon,

Attached is the requested documents.

1) DEP Form- MWM will be utilizing for used oil record keeping form
2) OSHA 10-hr student manual- Marine Terminals
3) We are not transporting filters

Marine Waste Management
Crystal Torres : Administrator/Bookkeeper
954-370-2628 *Office*
954-761-6803 *Direct Line*

On Tuesday, June 20, 2023 at 09:48:12 AM EDT, Polycart, Johanna <johanna.polycart@floridadep.gov> wrote:

Good Morning Ladies,

This email serves as a follow up to our Compliance Assistance Meeting on 06/19/2023. Thank you ladies for taking he time to discuss with me, and also thank you for being proactive in staying in compliance with regulations. Here are the remaining items that the facility need to provide to the Department in order to return to compliance, please provide by **6/30/2023**:

1. An example of an acceptance form for used oil and oily waste that the facility will now be keeping for their records. The type of information needed on the form is: name of generator of used oil, address, EPAID if available, the total number of gallons of used oil received from each source, including any oily wastes, the type of used oil received, the date of receipt, the destination or end use of used oil and oily wastes, and documentation of halogen screening. **Rule 62-710.510(1)(a-g)**
2. Information on the training provided to the employees that handle and transport the used oil. I will not be able to contact the company.
3. Like we agreed in the meeting the facility will not be transporting used oil filters for the rest of the year, until you update your registration for to indicate that you also transport used oil filters.

If you have questions or concerns do not hesitate to contact me.

Regards,

Johanna Polycart, MPH
Environmental Specialist III
Florida Department of Environmental Protection
Compliance Assurance Program
Southeast District – West Palm Beach
Johanna.Polycart@FloridaDEP.gov
Office: 561-681-6624

The Department of Environmental Protection values your feedback as a customer. Please take a few minutes to comment on the quality of service you received by completing the DEP Customer Survey