

# Training

Knowledge

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## HEALTH & SAFETY UPDATE AT NEWEA

January 28, 2020

David P. Horowitz, PE, CSP, [DPHorowitz@tighebond.com](mailto:DPHorowitz@tighebond.com)

# AGENDA

- **State Adopts OSHA**
  - DLS
- **OSHA Top 10 Most Cited**
- **Hazard Communication**
- **Confined Space Entry**
  - Lock Out/Tag Out

MARCH 14, 2018

## Baker signs OSHA bill for public workers



FILE PHOTO

Gov. Charlie Baker

BY STATE HOUSE NEWS SERVICE

All public workers in Massachusetts will operate under the same safety standards as their private sector counterparts under legislation that Gov. Charlie Baker has signed into law.

# MASSACHUSETTS & OSHA

- **March 9, 2018 - Governor Baker signed a bill adopting OSHA**
  - Original MGL introduced before OSHA existed
- **Clarifies**
  - Definition of public sector employees
  - Public sector employers must meet OSHA standards
- **Highlights**
  - DLS
- **DLS Inspections**
  - Imminent hazard, Accident, Voluntary, Complaint, Planned Programed Inspection

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# MASSACHUSETTS & OSHA

- **Does not replace OSHA**
- **Requirements are as strict as OSHA**
- **Effective date is February 1, 2019**
- **OSHA Plan State**
  - Connecticut; Illinois; Maine; New Jersey; and New York.
- **Public sector employers may get fined**

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**WHY DO WE CARE?**

# WHY DO WE CARE?

News Feature | June 11, 2019



## Death In Baltimore Traced To Collapsed Catwalk In Wastewater Facility

By Peter Chawaga

Following a tragic accident in a Baltimore wastewater treatment facility, a local Department of Public Works (DPW) employee has been found dead.

“Firefighters believe the DPW supervisor fell from a catwalk that spans the water filtration system inside the Patapsco Wastewater Treatment Plant in Curtis Bay,” according to CBS Local. “She was a DPW employee for more than 20 years – the last three of them at the wastewater treatment plant.”



The employee, identified as Trina Cunningham, was found after firefighters responded to a call about a missing employee at the plant. They found her body in a vat of water.

# WHY DO WE CARE?

FAIRFIELD

## 3 injured in wastewater treatment plant explosion



by: Associated Press

Posted: Aug 2, 2019 / 09:25 AM EDT / Updated: Aug 2, 2019 / 05:34 PM EDT

STAMFORD, Conn. (AP) — Authorities say three people have been injured in an explosion at a Connecticut water treatment plant.

# WHY DO WE CARE?

WAKE COUNTY NEWS

## Worker injured in fall at Raleigh wastewater treatment plant



by: CBS 17 Digital Desk

Posted: Dec 20, 2019 / 12:08 PM EST / Updated: Dec 20, 2019 / 12:22 PM EST

RALEIGH, N.C. (WNCN) – A worker was injured when he fell into a concrete junction box Friday morning at a City of Raleigh wastewater treatment plant, city officials said.



## WHY DO WE CARE?

# Evacuation lifted after chemical emergency at WV wastewater treatment plant

by WJLA | Monday, December 23rd 2019

AA



*Aerial photo of the wastewater treatment plant in Martinsburg, West Virginia. Evacuations have put in place after an accidental chemical mixture occurred at the plant. Monday, Dec. 23, 2019. (SkyTrak7)*

# WHY DO WE CARE?

LOCAL // HOUSTON

## Pasadena facility where two workers died had been sued, fined over safety concerns



John Tedesco

Dec. 28, 2019

Updated: Dec. 28, 2019 5:12 p.m.



1 of 2

Quola, 5100 Underwood Road, is shown Saturday, Dec. 28, 2019, in Pasadena where two workers died early Saturday cleaning a chemical tank, according to Harris County Sheriff's deputies.

Photo: Melissa Philip, Houston Chronicle / Staff photographer

# SAFETY TAKEAWAYS

- Watch for common issues!
- Watch your staff & contractors
- Management of change
  - Construction projects
  - New processes
  - New chemicals

News Feature | June 11, 2019



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Firefighters responded to a call about a worker who fell from a catwalk at a wastewater treatment facility.

LOCAL // HOUSTON

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John Tedesco | Dec. 20, 2019 | Updated: Dec. 20, 2019 5:12 p.m.



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by WILA | Monday, December 23rd 2019

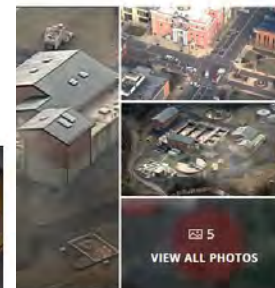
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United States  
Department  
of Labor

**FIRST .. A PLUG FOR DLS**



# TRAINING @ WATER AND SEWER PLANTS



## Employee Training Requirements for Water and Sewer Departments

Many municipalities have asked the Department of Labor Standards what safety training is required. The following list summarizes the most frequent training requirements observed during DLS inspections at public sector workplaces.

This list is tailored for: Drinking Water and Sewer Departments

Training Topic <sup>1,2,3,4</sup>	Standard	Pre-Assignment <sup>5</sup>	Refresher <sup>6</sup>
Plant Operations			
SOPs and equipment	5(a)(1)	New hire	Performance based
Ladders - portable	1910.30(b)(1)	Yes	Performance based
Emergency Action Plan	1910.38(e)	New hire	Performance based
Hazard Communication	1910.1200(h)	New hire	Performance based
Personal Protective Equipment	1910.132 (d)(1)	New hire	Performance based
Fixed Ladders greater than 25 ft. high	1910.28 (b)(1)	Yes	Performance based
Portable ladders	1910.30 (b)(1)	Yes	Performance based
Respirators, if used	1910.134(k)	Yes	Annual
Plant Maintenance			
Fall Protection – when hatches or floor openings are opened.	1910.30(b)(1)	Yes	Performance based
Lockout Tagout	1910.147(c)(7)	Yes	Performance based
Confined Space Entry	1910.146(g)	Yes	Performance based
Overhead hoist, if present.	1910.179(b)(8)	Yes	Performance based
Distribution			
Workzone Safety – working in roadway	1926.21(b)(2)	Yes	Performance based
Trench safety - Laborers	1926.21(b)(2)	Yes	Performance based
Trench safety – Competent Person	1926.21(b)(2)	Yes	Performance based
Tools – grinders, power saws, jackhammer	1926.21(b)(2)	Yes	Performance based
Vector – review Owner's Manual	1926.21(b)(2)	Yes	Performance based
Confined Space Entry – manholes and tanks	1910.146(g)	Yes	Performance based
Asbestos Cement Pipe (8-hr)	454 CMR 6.00	Yes	5 year
Laboratory			
Laboratory – train on SOPs and equipment	5(a)(1)	Yes	Performance based
Landscaping			
Chainsaw – review Owner's Manual and PPE	5(a)(1)	Yes	Performance based
Mowers – review Owner's Manual	5(a)(1)	Yes	Performance based
Roof Access and Maintenance			
Fall Protection – designated areas and/or fall restraint system	1910.30(b)(4)	Yes	Performance based
Snow Removal			
Snow blower – review Owner's Manual	5(a)(1)	Yes	Performance based

# TRAINING @ WATER AND SEWER PLANTS

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Snow Removal			
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# TRAINING @ WATER AND SEWER PLANTS

Optional Topics			
OSHA 10 in construction	Not required by OSHA standards.  Recommended if your employees are on site of public construction projects >\$10,000.	Optional	Does not expire
Ergonomics – safe lifting	Recommended when your department has a pattern of back injuries.	Recommended	1-3 years, based on department injury patterns.

- 1- **Topics:** Employees should be trained to safely perform the activities of their job. Training on these topics is expected if employees conduct these tasks. If these tasks are not conducted at your workplace, then training is not required.
- 2- **Job Titles that Require Training:** Train employees in a particular competency if their job duties require that activity. For example, all employees who are assigned to operate a chainsaw must be trained in chainsaw safety. Employees who will not be designated to operate a chainsaw do not need to complete chainsaw training.
- 3- **Training Provider:** Training should be provided by persons experienced and confident with the material. The training provider can be an employee of the employer. A certified training provider is mandatory for Asbestos Cement Pipe and OSHA 10, but is not required for other OSHA topics.
- 4- **Length of Training Session:** Most training topics can be effectively covered in less than one hour (ie. hazard communication; PPE; ladders). A longer length of time may be required for chainsaw safety, aerial lift operator training, and confined space entry. A minimum time period for length of training session is specified for asbestos cement pipe (8-hours). The employer is responsible for the decision on length of training.
- 5- **Proof of Training:** Keep a training attendance log. A certificate is not required.
- 6- **Initial Training:** Training should be provided before the employee is assigned to perform the task. This is similar to "new hire" training, but can also occur if the person's job duties expand.
- 7- **Performance Based Refresher Training:** Some OSHA standards mandate Annual training. Most training topics are "performance based." This means repeat the training when:
  - a. Employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge to perform the task safely;
  - b. New equipment, or chemicals introduce new hazards to the work area.
  - c. There is a change in procedures that present a hazard to which the employee has not been trained.

## • Topics

- Employees should be trained to safely perform the activities of their job. Training on these topics is expected if employees conduct these tasks. If these tasks are not conducted at your workplace, then training is not required.

## • Job Titles that require Training

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## • Training Provider

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## • Length of Training Session

- Most training topics can be effectively covered in less than one hour (ie. Hazard communication; PPE; ladders). A longer length of time may be required for chainsaw safety, aerial lift operator training, and confined space entry. A minimum time period for length of training session is specific for asbestos cement pipe (8-hours). The employer is responsible for the decision on length of training.

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OSHA 10 in construction	Recommended if your employees are on-site of public construction projects >\$10,000.		
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- 1- Topic:** Employees should be trained to safely perform the activities of their job. Training on these topics is expected if employees conduct these tasks. If these tasks are not conducted at your workplace, then training is not required.
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- 5- Proof of Training:** Keep a training attendance log. A certificate is not required.
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- 7- Performance Based Refresher Training:** Some OSHA standards mandate Annual training. Most training topics are "performance based." This means repeat the training when:
  - a. Employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge to perform the task safely;
  - b. New equipment, or chemicals introduce new hazards to the work area.
  - c. There is a change in procedures that present a hazard to which the employee has not been trained.

## • Proof of Training

- Keep a training attendance log. A certificate is not required.

## • Initial Training

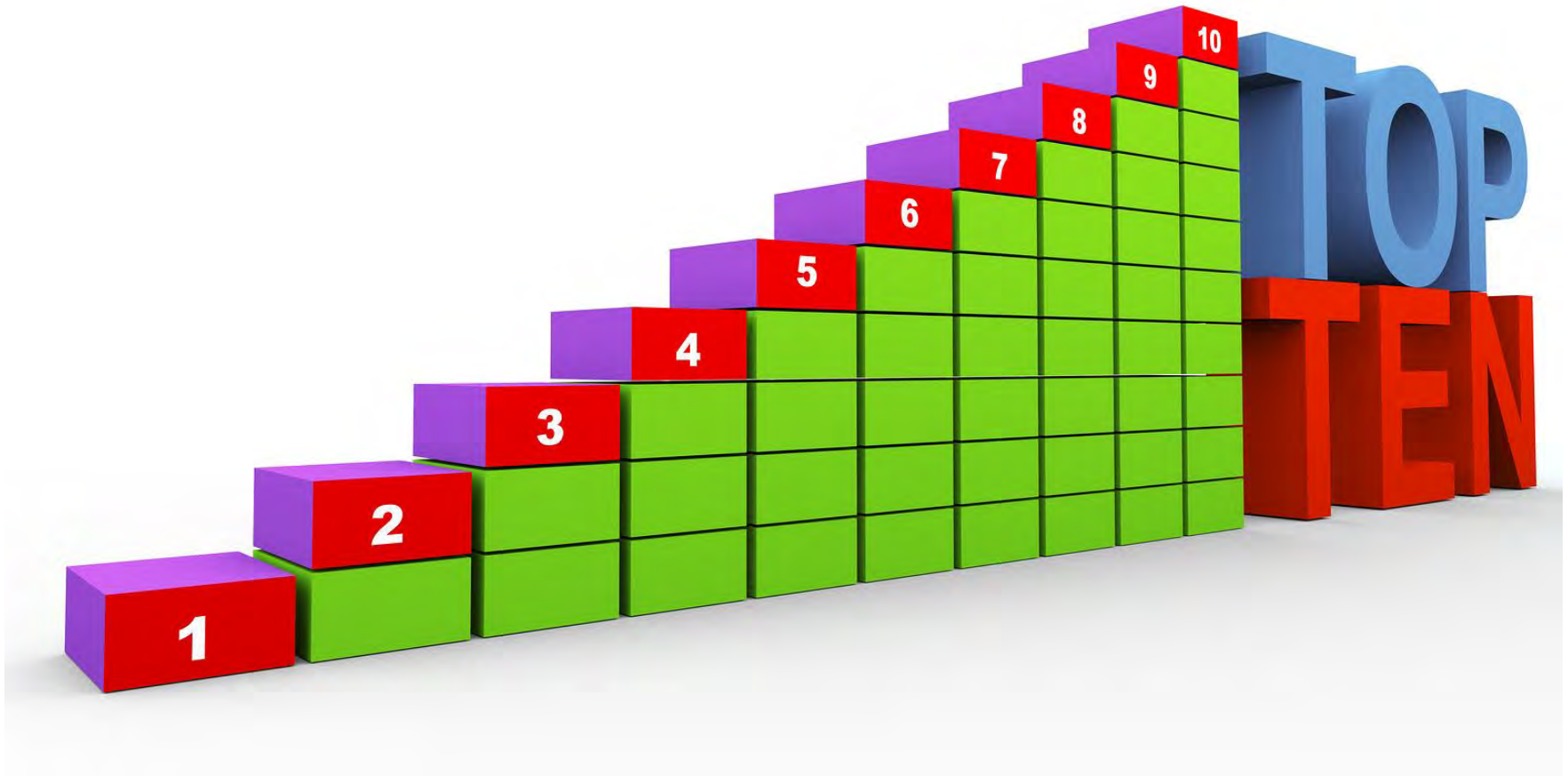
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## • Performance Based Refresher Training

- Some OSHA standards mandate Annual training. Most training topics are “performance based”. This means repeat the training when:
  - Employer has reason to believe that there are deviations from or inadequacies in the employees knowledge to perform the task safely;
  - New equipment, or chemicals introduce new hazards to the work area;
  - There is a change in procedures that present a hazard to which the employee has not been trained

OSHA Topic	Not covered by OSHA standards	Optional	Does not expire
OSHA 10 in construction	Recommended if your employees are an average of 18 years old Recommended if your department has a history of high injury.		
Employees with MRO		Recommended	1-3 years, based on department injury profile.

- Topic:** Employees should be trained to safely perform the activities of their job. Training in these topics is expected if employees conduct these tasks. If these tasks are not considered as your employee's main training is not required.
- Job Sites that Require Training:** Train employees in a particular competency if their job duties require the activity. For example, an employee who is assigned to operating equipment must be trained in equipment safety. Employees who will not be assigned to operate a device do not need to complete that device training.
- Training Provider:** Training should be provided by persons experienced and certified with the material. The training provider can be an employee of the employer. A certified training provider is mandatory for asbestos, confined space and OSHA 10, but is not required for other OSHA topics.
- Length of Training Session:** Most training topics can be effectively covered in less than one hour. In-house communication (PPE, lockout) is longer length of time may be required for chemical safety, aerial lift operator training, and confined space entry. At all times, the amount of training topics is directly proportional to the amount of time available. The amount is proportional to the duration of the training.
- Proof of Training:** Keep a training attendance log. A certificate is not required.
- Initial Training:** Training should be provided before the employee is assigned to perform job tasks. This applies to "new hire" training, but not the case if the person's job duties expand.
- Performance Based Refresher Training:** Some OSHA standards mandate Annual Training. Most training topics are "performance based". This means repeat the training when:
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## OSHA'S TOP TEN MOST CITED



# OSHA'S TOP TEN MOST CITED

## 2019 OSHA Top 10

<u>Program</u>	<u>Citation</u>	<u>Violations</u>
Fall Protection	1926.501	6,010
Hazard Communication	1910.1200	3,671
Scaffolding	1926.451	2,813
Lockout/Tagout	1910.147	2,606
Reparatory Protection	1910.134	2,450
Ladders	1926.105	2,345
Powered Industrial Trucks	1910.178	2,093
Fall Protection - Training Requirements	1926.503	1,773
Machine Guarding	1910.212	1,743
PPE and Lifesaving Equipment	1926.102	1,411

# OSHA'S TOP TEN MOST CITED

## OSHA's 2015 TOP TEN Most Frequently Cited Violations

- |                                      |   |
|--------------------------------------|---|
| 1. 1926.501 – Fall Protection (C)    | 6. 1910.178 – Powered Industrial Trucks         |
| 2. 1910.1200 – Hazard Communication  | 7. 1926.1053 – Ladders (C)                      |
| 3. 1926.451 – Scaffolding (C)        | 8. 1910.305 – Electrical, Wiring Methods        |
| 4. 1910.134 – Respiratory Protection | 9. 1910.212 – Machine Guarding                  |
| 5. 1910.147 – Lockout/Tagout         | 10. 1910.303 – Electrical, General Requirements |

(C) = Construction standard

## OSHA's 2014 TOP TEN Most Frequently Cited Violations

- |                              |                                |
|------------------------------|--------------------------------|
| 1. Fall protection (C)       | 6. Lockout/tagout              |
| 2. Hazard communication      | 7. Ladders (C)                 |
| 3. Scaffolding (C)           | 8. Electrical: wiring          |
| 4. Respiratory protection    | 9. Machine guarding            |
| 5. Powered industrial trucks | 10. Electrical: systems design |

C = Construction standard

## OSHA's 2013 TOP TEN Most Frequently Cited Violations

- |                           |                               |
|---------------------------|-------------------------------|
| 1. Fall protection (C)    | 6. Powered industrial trucks  |
| 2. Hazard communication   | 7. Ladders (C)                |
| 3. Scaffolding (C)        | 8. Lockout/tagout             |
| 4. Respiratory protection | 9. Electrical: systems design |
| 5. Electrical: wiring     | 10. Machine guarding          |

C = Construction standard



# #10 PERSONAL PROTECTIVE EQUIPMENT

- Eye Protection
- Face Protection



# #9 MACHINE GUARDING

## • Machine Guarding In Wastewater Treatment Plants

- Engineered or structural fixes
- Job Hazard Analysis (JHAs)



## #9 MACHINE GUARDING



# #8 FALL PROTECTION - TRAINING



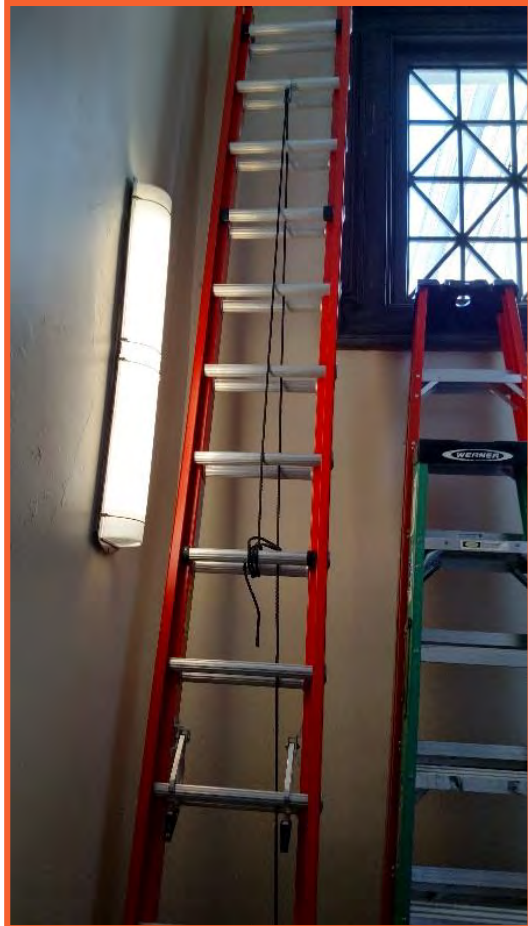
# #7 POWERED INDUSTRIAL TRUCKS

- PIVs
- Hoisting requirements



# #6 LADDERS – CONSTRUCTION

- Design considerations
- Milestone Observation



## OSHA<sup>®</sup> FactSheet

### Reducing Falls in Construction: Safe Use of Stepladders

Workers who use ladders in construction risk permanent injury or death from falls and electrocutions. These hazards can be eliminated or substantially reduced by following good safety practices. This fact sheet examines some of the hazards workers may encounter while working on **stepladders** and explains what employers and workers can do to reduce injuries. OSHA's requirements for stepladders are in Subpart X—Stairways and Ladders of OSHA's Construction standards.

#### What is a Stepladder?

A **stepladder** is a portable, self-supporting, A-frame ladder. It has two front side rails and two rear side rails. Generally, there are steps mounted between the front side rails and bracing between the rear side rails. (See Figure 1, below.)



Figure 1: Stepladder

#### PLAN Ahead to Get the Job Done Safely.

A competent person must visually inspect stepladders for visible defects on a periodic basis and after any occurrence that could affect their safe use. Defects include, but are not limited to:

- Structural damage, split/bent side rails, broken or missing rungs/steps/cleats and missing or damaged safety devices.

- Grease, dirt or other contaminants that could cause slips or falls.
- Paint or stickers (except warning or safety labels) that could hide possible defects.

#### PROVIDE the Right Stepladder for the Job with the Proper Load Capacity.

- Use a ladder that can sustain at least four times the maximum intended load, except that each extra-heavy duty type 1A metal or plastic ladder shall sustain at least 3.3 times the maximum intended load. Also acceptable are ladders that meet the requirements set forth in Appendix A of Subpart X. Follow the manufacturer's instructions and labels on the ladder. To determine the correct ladder, consider your weight plus the weight of your load. Do not exceed the load rating and always include the weight of all tools, materials and equipment.

Type	Duty Rating	Use	Load
1AA	Special Duty	Rugged	375 lbs.
1A	Extra-Heavy Duty	Industrial	300 lbs.
1	Heavy Duty	Industrial	250 lbs.
II	Medium Duty	Commercial	225 lbs.
III	Light Duty	Household	200 lbs.

Source for Types IA, I, II, III: Subpart X—Stairways and Ladders, Appendix A American National Standards Institute (ANSI) 14.1, 14.2, 14.5 (1989) or OSHA's Construction standards. Source for Type IAA: ANSI 14.1, 14.2, 14.6 (2009) which are non-mandatory guidelines.

# #6 LADDERS – CONSTRUCTION

- **Regulatory Changes:**

- Protect against specific hazard(s)
- As of November 19, 2018:
  - All existing fixed ladders are required to have a cage, well, ladder safety system or personal fall arrest system for climbs of over 24’.
- By November 18, 2036 (twenty years from the date of publication of the revised standard):
  - Replace cages and wells on all ladders extending more than 24 feet with a ladder safety or personal fall arrest system



# #5 RESPIRATORY PROTECTION

- Engineer out, if possible
- Written Plan
  - Baseline physical
  - Medical surveillance
  - Fit testing





# #4 LOCKOUT / TAGOUT

				<b>LOCKOUT TAGOUT SAFETY PROCEDURE</b>		Isolation Devices <b>4</b>
				Equipment Description <b>Thickened Waste Activated Sludge Pump (TWAS-1)</b>		Asset ID <b>NA</b>
Department <b>Sludge Thickening</b>				Dept # <b>NA</b>		
Developed By <b>Tighe &amp; Bond</b>	Origin Date <b>Oct.-2016</b>	Procedure ID <b>010</b>	Revision # <b>0</b>	Revision Date <b>N/A</b>		

This Lockout/Tag-out Control Procedure applies to all Thomaston WPCF employees. The following must be performed by personnel who are trained & authorized to perform work under Lockout conditions. Work shall be completed in accordance with Thomaston WPCF's written lockout tag-out program and in conjunction with the information presented within this written lockout tag-out safety procedure.



**\* ALWAYS PERFORM A MACHINE STOP BEFORE LOCKING OUT DISCONNECTS \***





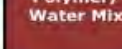
ID	ENERGY SOURCE	HAZARD	STORED ENERGY	REQUIRED STEP	LOCKOUT DEVICE
	NA	Biological (sludge)		Wear appropriate PPE, as necessary.	NA
	Kinetic Energy	Crushing		Allow moving parts to stop before beginning work <b>Verify</b> - Attempt to start machine	See System Power below
	System Power	Electrocution 480 Volt	None	<b>Isolate</b> - Disconnect switch, Sludge Thickener Control Panel (adjacent Room) <b>Verify</b> - Qualified person test system power for energized circuits	Lock, Tag
	Pressure (10-15 PSI)	Pressure 5-10 PSI, Biological	Pressure	<b>Isolate</b> - Close valve <b>Verify</b> - Drain sludge to relieve pressure	Cover, Lock, Tag
	Pressure (10-20 PSI)	Pressure 10-20 PSI, Biological	Pressure	<b>Isolate</b> - Close valves <b>Verify</b> - Drain sludge to relieve pressure	Cover, Lock, Tag
	Polymer/Water Mix	Liquid Pressure/ Hazardous Chemical	10-20 PSI PSI	<b>Isolate</b> - Close valve <b>Verify</b> - Drain fluids to relieve pressure	Cover, Lock, Tag

				<b>LOCKOUT TAGOUT SAFETY PROCEDURE</b>		Isolation Devices  <b>4</b>
				Equipment Description <b>Thickened Waste Activated Sludge Pump (TWAS-1)</b>		
				Department <b>Sludge Thickening</b>		Dept # <b>NA</b>
Developed By <b>Tighe &amp; Bond</b>	Origin Date <b>Oct.-2016</b>	Procedure ID <b>010</b>	Revision # <b>0</b>	Revision Date <b>N/A</b>		

This Lockout/Tag-out Control Procedure applies to all Thomaston WPCF employees. The following must be performed by personnel who are trained & authorized to perform work under Lockout conditions. Work shall be completed in accordance with Thomaston WPCF's written lockout tag-out program and in conjunction with the information presented within this written lockout tag-out safety procedure.



**\* ALWAYS PERFORM A MACHINE STOP BEFORE LOCKING OUT DISCONNECTS \***

ID	ENERGY SOURCE	HAZARD	STORED ENERGY	REQUIRED STEP	LOCKOUT DEVICE
	NA	Biological (sludge)		Wear appropriate PPE, as necessary.	NA
	Kinetic Energy	Crushing		Allow moving parts to stop before beginning work <b>Verify</b> - Attempt to start machine	See System Power below
	System Power	Electrocution 480 Volt	None	<b>Isolate</b> - Disconnect switch, Sludge Thickener Control Panel (adjacent Room) <b>Verify</b> - Qualified person test system power for energized circuits	Lock, Tag
		Pressure 5-10 PSI, Biological	Pressure	<b>Isolate</b> - Close valve <b>Verify</b> - Drain sludge to relieve pressure	Cover, Lock, Tag
		Pressure 10-20 PSI, Biological	Pressure	<b>Isolate</b> - Close valves <b>Verify</b> - Drain sludge to relieve pressure	Cover, Lock, Tag
		Liquid Pressure/ Hazardous Chemical	10-20 PSI PSI	<b>Isolate</b> - Close valve <b>Verify</b> - Drain fluids to relieve pressure	Cover, Lock, Tag

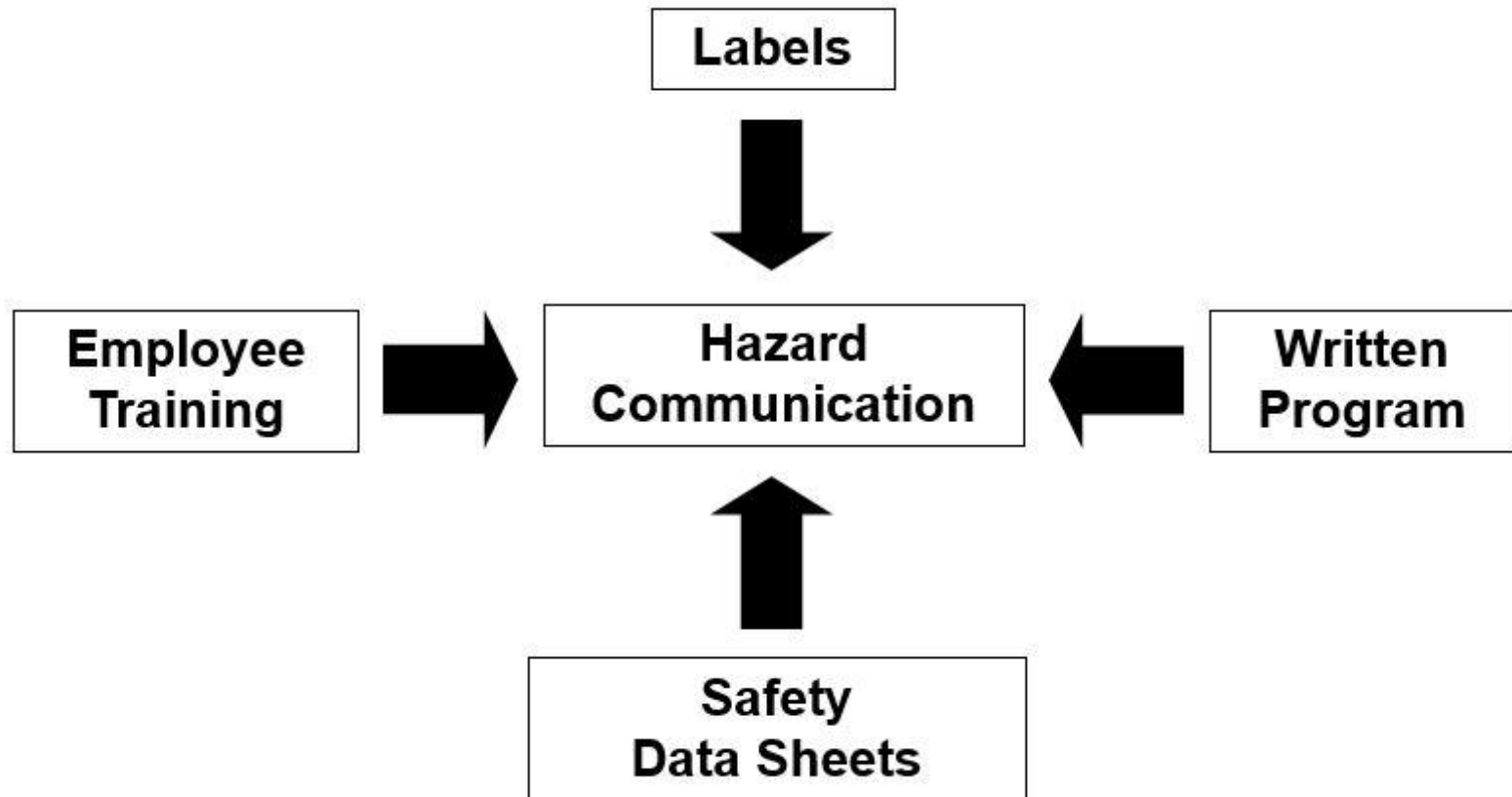
# #3 SCAFFOLDING – CONSTRUCTION

- Design Considerations
- Milestone Observation



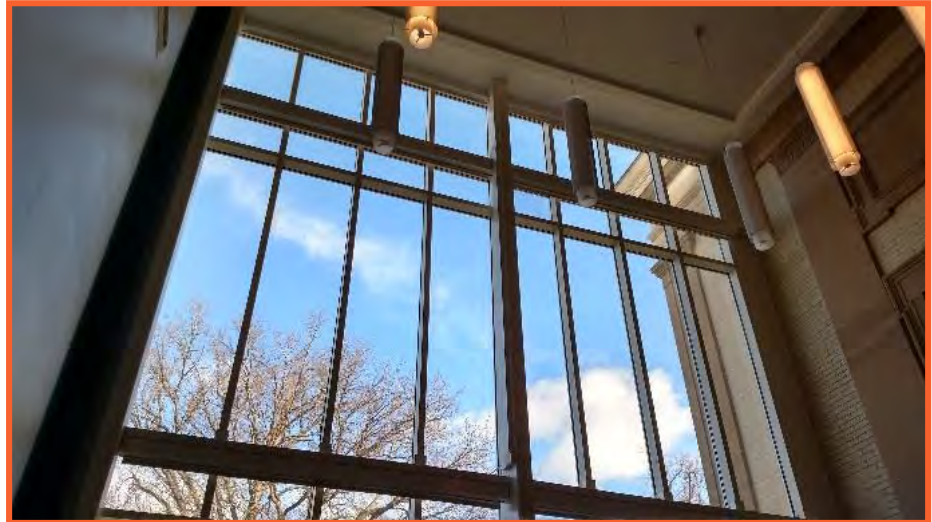
# #2 HAZARD COMMUNICATION

- Globally Harmonized System
- Risk Management Planning
  - Chlorine Gas = >2,500 Lbs



# #1 FALL PROTECTION – CONSTRUCTION

- Design considerations
- Milestone Observation



**Safety Pays** Falls Cost

**PLAN.  
PROVIDE.  
TRAIN.**

Falls from ladders, scaffolds and roofs can be prevented!

[www.osha.gov/stopfalls](http://www.osha.gov/stopfalls)



**PLAN** ahead to get the job done safely.  
**PROVIDE** the right equipment.  
**TRAIN** everyone to use the equipment safely.



OSHA 3557-06 2012

[www.osha.gov/stopfalls](http://www.osha.gov/stopfalls) 800-321-OSHA (6742) TTY 1-877-889-5627

# HAZARD COMMUNICATION



# APPLICABILITY

You Have a “Right To Know”  
About Chemical Hazards

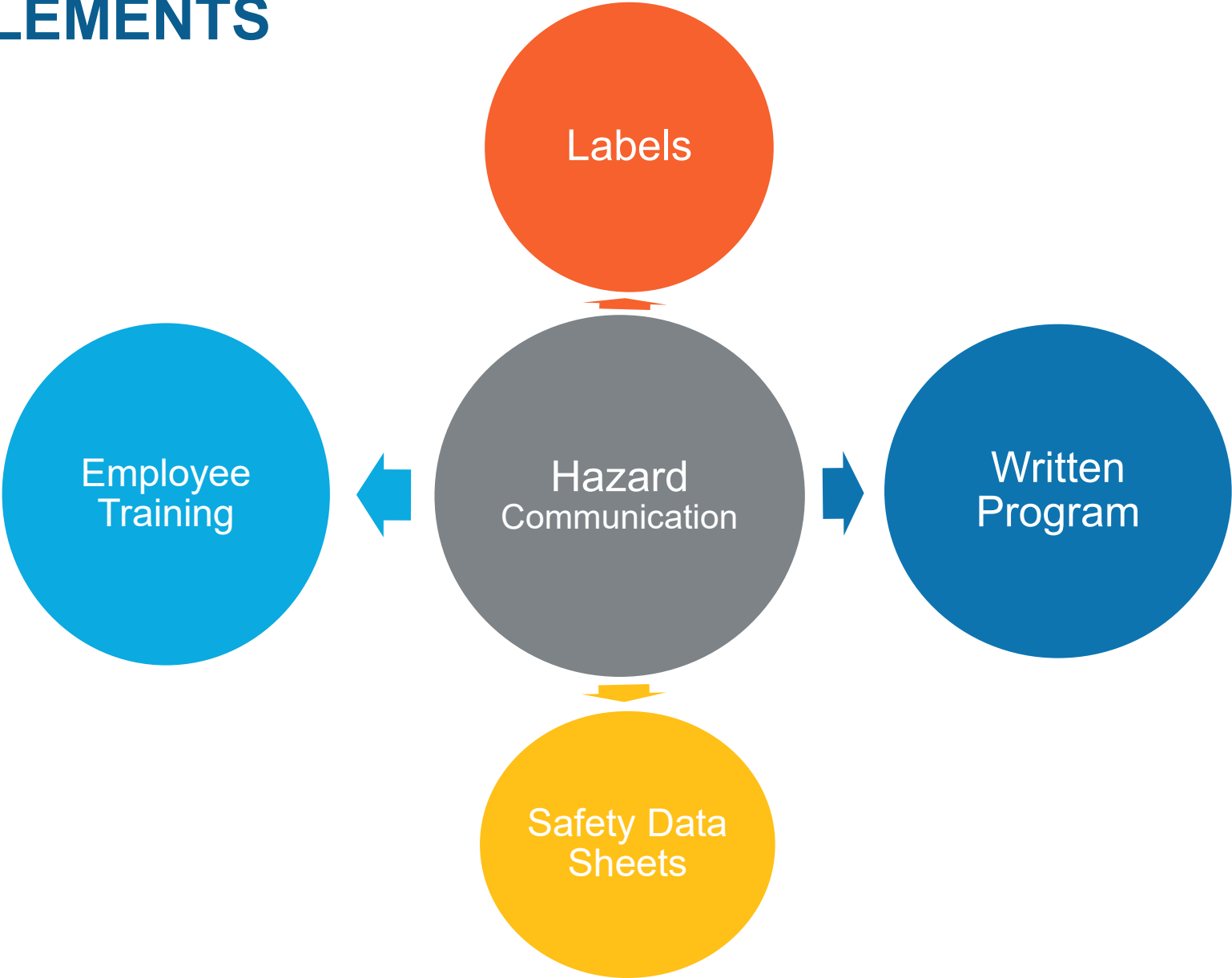
Required Under  
OSHA Standard  
& State Law

Applicable to All  
Employees

Includes  
Contractors on  
Premises

*I have  
a right  
to know.*

# ELEMENTS





# GLOBAL HARMONIZED SYSTEM (GHS)

What is it?

Why do we care?





Who is applicable?

When must we comply?





- Workers must be trained by December 1, 2013
- The final rule requires product manufacturers to adopt the standard by June 1, 2015 and product distributors to adopt the standard by December 1, 2015
- June 1, 2016 - Employers must be in full compliance with revised HCS, including complete training of employees on new hazards and/or revisions to workplace hazard communication program



# HAZARD SYMBOLS AND CLASSES

			
Flammables Self Reactives Pyrophorics Self-heating Emits Flammable Gas Organic Peroxides	Oxidizers	Irritant Dermal Sensitizer Acute Toxicity (harmful) Narcotic Effects Respiratory Tract Irritation	Explosives Self Reactives Organic Peroxides

# HAZARD SYMBOLS AND CLASSES

			
Corrosives	Gases Under Pressure	Carcinogen Respiratory Sensitizer Reproductive Toxicity Target Organ Toxicity Mutagenicity Aspiration Toxicity	Acute Toxicity (sever)

- Prescriptive requirements
- Sections must be consistent
- Information dictated by GHS guidance

11341 - ANTHRANILIC ACID

Revision date 2005-06-17

## SAFETY DATA SHEET ANTHRANILIC ACID

MANUFACTURER/PREPARATION AND THE COMPANY

Product name: ANTHRANILIC ACID  
 Address: Södra Långgatan 10  
 SE-421 32 Västra Frölunda  
 Tel: 031-680490  
 Fax: 031-680717

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS No.	Content	Symbol	R-phrases
ANTHRANILIC ACID	204-267-5	118-92-3	98 %	-	R-36/37

See section 16 for explanations to R-phrases

EC No. 204-267-5

CAS No. 118-92-3

### 3. HAZARDS IDENTIFICATION

EYE CONTACT: can irritate the eyes. SKIN CONTACT: may give irritations to the skin.  
 INGESTION: may cause nausea, vomiting and diarrhea. INHALATION: may irritate the  
 mucous membranes.

### 4. FIRST AID MEASURES

Inhalation	Fresh air.
Ingestion	Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Try to induce vomiting. To hospital.
Skin	Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water.
Eyes	Promptly wash eyes with plenty of water while lifting the eye lids. Contact physician if discomfort continues.

### 5. FIRE FIGHTING MEASURES

Extinguishing media Fire can be extinguished using: Water. Foam.

### 6. ACCIDENTAL RELEASE MEASURES

Spill cleanup methods Avoid generation and spreading of dust.

# SDS SECTIONS

- **Section 1, Identification**
- **Section 2, Hazard(s)**
- **Section 3, Composition/information**
- **Section 4, First-aid measures**
- **Section 5, Fire-fighting 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**
- **Section 16, Other information, includes the date of preparation or last revision.**

# LABEL ELEMENTS

## C.4.3 ACUTE TOXICITY - INHALATION (Classified in Accordance with Appendix A.1)

**Pictogram**  
Skull and crossbones



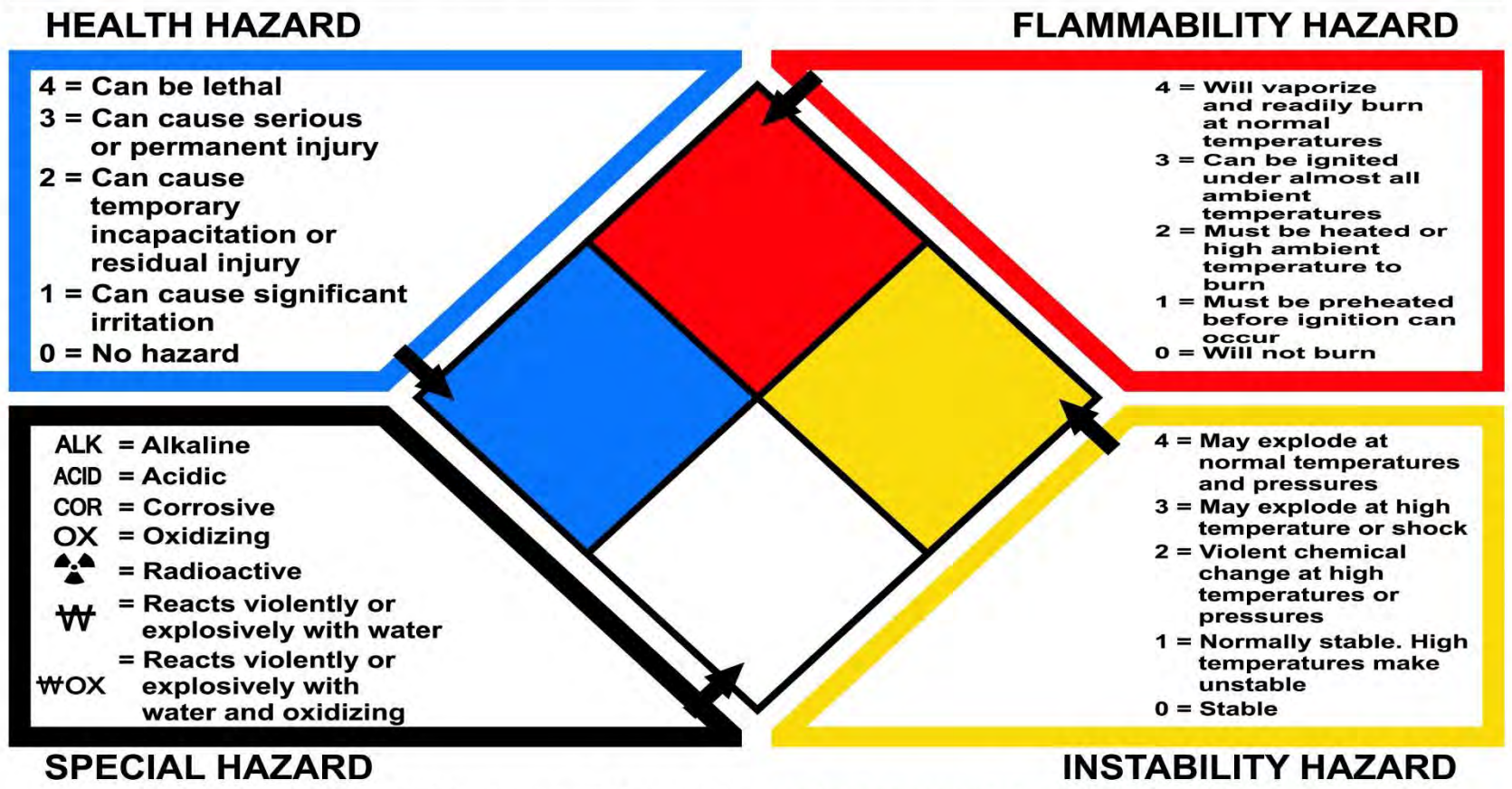
Hazard category	Signal word	Hazard statement
1	Danger	Fatal if inhaled
2	Danger	Fatal if inhaled

Precautionary statements

Prevention	Response	Storage	Disposal
<p><b>Do not breathe dust/fume/gas/mist/vapors/spray.</b> Chemical manufacturer, importer, or distributor to specify applicable conditions.</p> <p><b>Use only outdoors or in a well-ventilated area.</b></p> <p><b>[In case of inadequate ventilation] wear respiratory protection.</b> Chemical manufacturer, importer, or distributor to specify equipment. <i>- Text in square brackets may be used if</i></p>	<p><b>If inhaled: Remove person to fresh air and keep comfortable for breathing.</b></p> <p><b>Immediately call a poison center/doctor/...</b> ... Chemical manufacturer, importer, or distributor to specify the appropriate source of emergency medical advice.</p> <p><b>Specific treatment is urgent (see ... on this label)</b> ... Reference to supplemental first aid instruction. <i>- if immediate administration of antidote</i></p>	<p><b>Store in a well-ventilated place. Keep container tightly closed.</b> <i>- if product is volatile as to generate hazardous atmosphere.</i></p> <p><b>Store locked up.</b></p>	<p><b>Dispose of contents/container to...</b> ... in accordance with local/regional/national/international regulations (to be specified).</p>

# NFPA DIAMOND

## NFPA Rating Explanation Guide



*This chart for reference only - For complete specifications consult the NFPA 704 Standard*

# IMPORTANT TO REMEMBER!



## THE NFPA SYSTEM:

The NFPA system has hazard numbers ranging from 0 to 4, *with 4 being the most hazardous and 0 being the least hazardous*

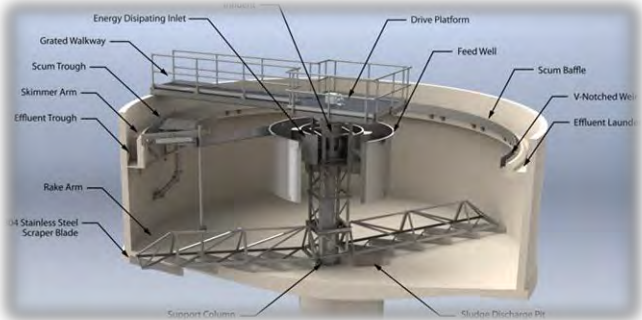
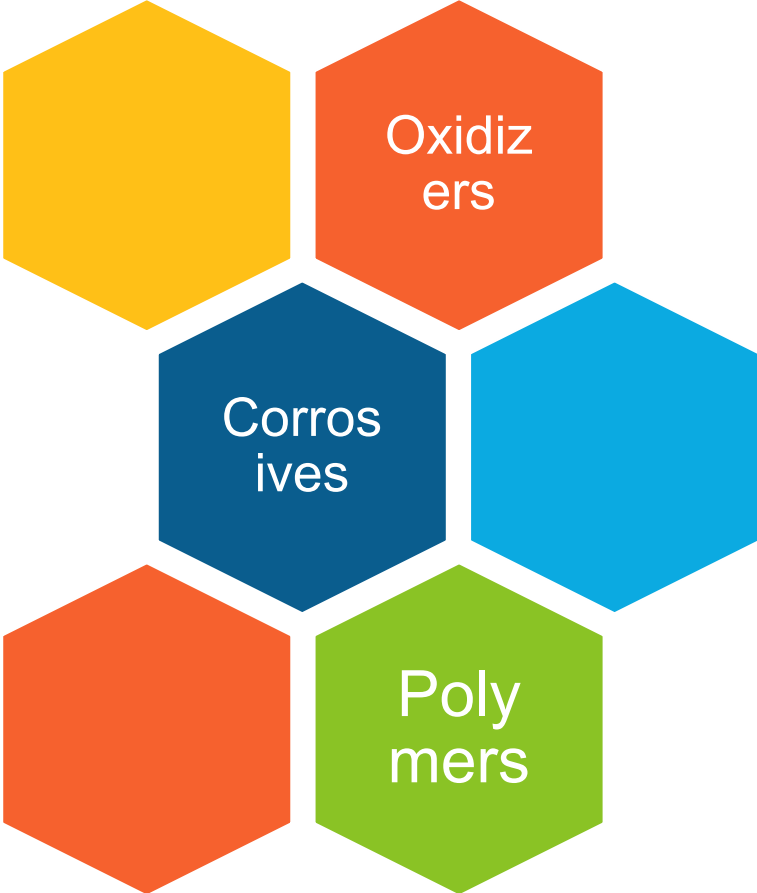
## THE GHS SYSTEM:

The GHS system has hazard numbers ranging from 1 to 4, *with 1 being the most hazardous and 4 being the least hazardous*

# GHS



# SPECIFIC CHEMICALS



# CORROSIVES

Corrosive to metals

Skin corrosion/irritation

Serious eye damage/eye irritation

Carcinogenicity

Hazardous to aquatic environment

# OXIDIZERS

Corrosive to metals

Serious eye damage

Skin irritation

Toxic to aquatic life

00000024 SAFETY DATA SHEET Page 1

**LAVO inc.**  
11600 Blvd. Saint-Jean-Baptiste  
Montreal, QC, H3C 2J8  
CANADA  
1.800.361.8838

PRODUCT: OD-12%, PCP29862, DIM02248211, CFIA CODE: OD 12

**SECTION 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME: OD 12%, PCP29862, DIM02248211, CFIA  
 PRODUCT CODE(S): OD 12  
 CHEMICAL FAMILY: Sodium Hypochlorite Solution 12%-13%, Commercial Grade  
 RECOMMENDED USE: NSF and NSF Intl. Aqueous Hypochlorite Solution is used as an oxidizing and bleaching agent - For industrial, institutional, swimming pool use. For use in industrial recirculating cooling water systems. For municipal water treatment of sewage and industrial effluent and for sanitation. Use for sanitation and disinfection. Bleach for paper mills.

MANUFACTURER NAME AND ADDRESS: LAVO inc.  
11000 Blvd. Saint-Jean-Baptiste  
Montreal, QC, H3C 2J8  
CANADA  
1-800-361-8838  
CANUTEC 24-hour Number: 813-950-6860

24 HOUR EMERGENCY NUMBER:

**SECTION 02: HAZARD IDENTIFICATION**



**SIGNAL WORD:** DANGER

**GHS CLASSIFICATION:** Serious Eye Damage Eye Irritation Category 1, Skin Corrosion Category 1, Specific Target Organ Toxicity - Single Category 3, Respiratory Irritant Category 1, Acute Aquatic Toxicity Category 1, Chronic Aquatic Toxicity Category 1

**HAZARD STATEMENTS:** H314 Causes severe skin burns and eye damage. H330 May be corrosive to metals. H314 Causes serious skin burns and eye damage. H330 May cause respiratory irritation. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS:** P201 Do not breathe dust/fume/gas/mist/vapours/spray. P261 Wash thoroughly after handling. P273 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection. P304+P340 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P312 Immediately call a POISON CENTER or doctor/physician. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P501 Dispose of contents/container to an approved waste disposal plant.

**SECTION 03: COMPOSITION INFORMATION ON INGREDIENTS**

HAZARDOUS INGREDIENTS	CAS #	WT. %
Sodium Hypochlorite	7681-82-9	10-15
Sodium Hydroxide	1310-73-7	0.5-1.5

**SECTION 04: FIRST AID MEASURES**

**ROUTES OF EXPOSURE:** Eye, Skin, Ingestion and Inhalation.

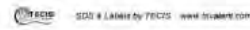
**INHALATION:** Remove victim to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get immediate medical attention. Call a poison center or physician.

**EYE CONTACT:** Immediately hold eyelids open and flush with water for at least 15 minutes. Check for and remove any contact lenses if easy to do. Consult a physician.

**SKIN CONTACT:** Immediately flush skin with plenty of water for 15 minutes. Remove contaminated clothing and wash before reuse. Consult a physician.

**INGESTION:** Call immediately a poison center or a doctor. Do not induce vomiting or give anything by mouth to an unconscious person. Rinse out mouth with water.

**ACUTE SYMPTOMS/EFFECTS:** Eyes: Causes eye burns. Causes eye irritation.



**Safety Data Sheet**  
**Sodium Hypochlorite, 12.5%**

SDS Revision Date: 05/06/2015

**1. Identification**

**1.1. Product identifier**  
**Product Identity:** Sodium Hypochlorite, 12.5%  
**Alternate Names:** Sodium Hypochlorite, 12.5%

**1.2. Relevant identified uses of the substance or mixture and uses advised against**  
**Intended use:** Laundry Bleach  
**Application Method:** See Technical Data Sheet.

**1.3. Details of the supplier of the safety data sheet**  
**Company Name:** Gurtler Industries, Inc.  
15475 South LaSalle St.  
South Holland, IL 60473 US

**Emergency**  
**24 hour Emergency Telephone No.:** (708) 331-2550  
**Customer Service:** Gurtler Industries, Inc. INFOTRAC - (800) 535-5053

**2. Hazard(s) identification**

**2.1. Classification of the substance or mixture**  
 Skin Corr./Irr. 1C, H314 Causes severe skin burns and eye damage

**2.2. Label elements**  
 Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



**Danger**

H314: Causes severe skin burns and eye damage

**[Prevention]:**  
 P260: Avoid breathing gas/mist/vapours/spray  
 P264: Wash thoroughly after handling.  
 P273: Avoid release to the environment.

**Safety Data Sheet**  
 according to 29CFR1910.1200 and GHS Rev. 3  
 Effective date : 12.14.2014 Page 1 of 7

**Sodium Hypochlorite, 13%**

**SECTION 1 : Identification of the substance/mixture and of the supplier**

**Product name :** Sodium Hypochlorite, 13%

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number:** S25552

**Recommended uses of the product and uses restrictions on use:**

**Manufacturer Details:**  
 AquaPhoenix Scientific,  
 9 Barnhart Drive, Hanover, PA 17331

**Supplier Details:**  
 Fisher Science Education  
 15 Jet View Drive, Rochester, NY 14624

**Emergency telephone number:**  
 Fisher Science Education - Emergency Telephone No.: 800-535-5053

**SECTION 2 : Hazards identification**

**Classification of the substance or mixture:**

- Corrosive** Corrosive to metals, category 1  
Serious eye damage, category 1
- Irritant** Skin irritation, category 2

**Eye corr. 1**  
**Skin Irrit. 2**  
**Aquatic Acute 2**  
**Aquatic Chronic 3**  
**Metal Corr. 1**

**Signal word:** Danger

**Hazard statements:**

May be corrosive to metals  
 Causes serious eye damage  
 Causes skin irritation  
 Toxic to aquatic life with long lasting effects

**Precautionary statements:**

If medical advice is needed, have product container or label at hand  
 Keep out of reach of children  
 Read label before use  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Wash skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.  
 Continue rinsing





LAVO Inc.  
11900 Boul. Saint-Jean-Baptiste  
Montréal, QC, H3C 2J3  
CANADA  
1-800-361-6898

PRODUCT: OD-12%, PCP29852, DIN02245211, CFIA

CODE: OD 12

## SECTION 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: OD-12%, PCP29852, DIN02245211, CFIA  
 PRODUCT CODE(S): OD 12  
 CHEMICAL FAMILY: Sodium Hypochlorite Solution 10%-15%, Commercial Grade  
 RECOMMENDED USE: NSF mil 57mg/L, Alkaline Hypochlorite Solution is used as an oxidizing and bleaching agent. For industrial, institutional, swimming pool use. Food plant use. For use in industrial recirculating cooling water systems. For municipal water treatment of sewage and industrial effluent and for sanitation. Use for sanitization and disinfection. Brewery pasteurizers.

MANUFACTURING NAME AND ADDRESS: LAVO Inc.  
11900 Boul. Saint-Jean-Baptiste  
Montréal, QC, H3C 2J3  
CANADA  
1-800-361-6898

24 HOUR EMERGENCY NUMBER: CANUTEC 24-Hour Number: 613-956-6660.

## SECTION 02: HAZARD IDENTIFICATION



SIGNAL WORD: DANGER.  
 GHS CLASSIFICATION: Serious Eye Damager Eye Irritation Category 1, Skin corrosion Category 1, Specific Target Organ Toxicity (Single Category 3), Respiratory tract Irritation Category 1, Acute aquatic toxicity Category 1, Chronic aquatic toxicity Category 1.

HAZARD STATEMENTS: H330 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS: P200 Do not breathe dust/fume/gas/mist/vapour/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310 Immediately call a POISON CENTER or doctor/physician. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P501 Dispose of contents/container to an approved waste disposal plant.

## SECTION 03: COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	CAS #	WT. %
Sodium Hypochlorite	7661-62-9	10-15
Sodium Hydroxide	1310-73-2	0.5-1.5

## SECTION 04: FIRST AID MEASURES

ROUTES OF EXPOSURE: Eye, Skin, Ingestion and Inhalation.  
 INHALATION: Remove victim to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get immediate medical attention. Call a poison center or physician.  
 EYE CONTACT: Immediately hold eyelids open and flush with water for at least 15 minutes. Check for and remove any contact lenses if easy to do. Consult a physician.  
 SKIN CONTACT: Immediately flush skin with plenty of water for 15 minutes. Remove contaminated clothing and wash before reuse. Consult a physician.  
 INGESTION: Call immediately a poison center or a doctor. Do not induce vomiting or give anything by mouth to an unconscious person. Rinse out mouth with water.  
 ACUTE SYMPTOMS/EFFECTS: Eyes: Causes eye burns. Causes eye irritation.





# Safety Data Sheet Sodium Hypochlorite, 12.5%

SDS Revision Date:

05/06/2015

## 1. Identification

### 1.1. Product identifier

**Product Identity** Sodium Hypochlorite, 12.5%

**Alternate Names** Sodium Hypochlorite, 12.5%

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Intended use** Laundry Bleach

**Application Method** See Technical Data Sheet.

### 1.3. Details of the supplier of the safety data sheet

**Company Name** Gurtler Industries, Inc.  
15475 South LaSalle St.  
South Holland, IL 60473 US

### Emergency

**24 hour Emergency Telephone No.** (708) 331-2550

**Customer Service: Gurtler Industries, Inc.** INFOTRAC - (800) 535-5053

## 2. Hazard(s) identification

### 2.1. Classification of the substance or mixture

Skin Corr./Irr. 1C, H314 Causes severe skin burns and eye damage

### 2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



**Danger**

H314: Causes severe skin burns and eye damage

### [Prevention]:

P260: Avoid breathing gas/mist/vapours/spray

P264 Wash thoroughly after handling.

P273: Avoid release to the environment.

Sodium Hypochlorite,13%

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : Sodium Hypochlorite,13%

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25552

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific  
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education  
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



**Corrosive**

Corrosive to metals, category 1  
Serious eye damage, category 1



**Irritant**

Skin Irritation, category 2

Eye corr. 1  
Skin Irrit. 2  
Aquatic Acute 2  
Aquatic Chronic 3  
Metal Corr. 1

Signal word :Danger

Hazard statements:

May be corrosive to metals  
Causes serious eye damage  
Causes skin irritation  
Toxic to aquatic life with long lasting effects

Precautionary statements:

If medical advice is needed, have product container or label at hand  
Keep out of reach of children  
Read label before use  
Wear protective gloves/protective clothing/eye protection/face protection  
Wash skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.  
Continue rinsing

# 3 SDS for Sodium Hypochlorite









## **CONFINED SPACE ENTRY**

**How to meet Permit Required Confined Space standards**

# PER OSHA – WHY DO ACCIDENTS HAPPEN?

- **Entrant:**

- Does not believe it is a confined space
- Trusts their senses
- Underestimates the danger
- Does not pay attention in the confined space
- Does not use testing equipment
- Ignores the testing equipment
- Has done the job many times before with no issue

- **Rescuer:**

- Wants to help



# CONFINED SPACES

- **OSHA Definition:**

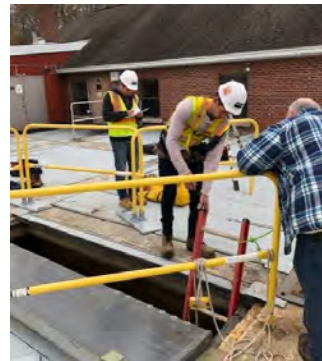
- A space large enough for an employee to bodily enter  
AND
- Has a limited or restricted means of entry or exit  
AND
- Is not designed for continuous occupancy by the employee



# CONFINED SPACES

- **OSHA Definition:**

- A space large enough for an employee to bodily enter AND
- Has a limited or restricted means of entry or exit AND
- Is not designed for continuous occupancy by the employee



- **Full size door ≠ Limited access**
- **OSHA compliant stairs ≠ Limited access**
- **Ladder access = Limited access**

# CONFINED SPACES

- **OSHA Definition:**

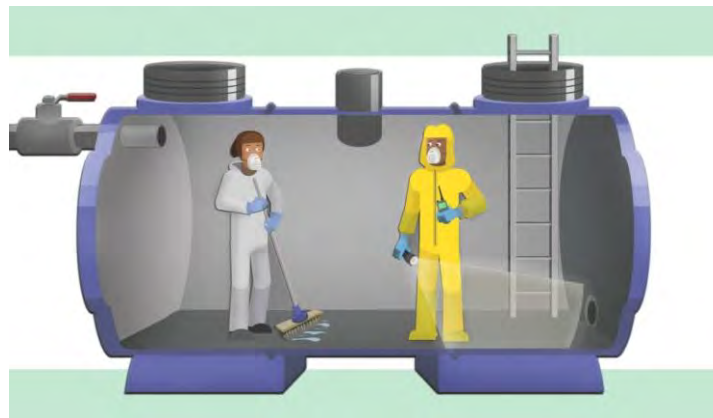
- A space large enough for an employee to bodily enter  
AND
- Has a limited or restricted means of entry or exit  
AND
- Is not designed for continuous occupancy by the employee



# CONFINED SPACES

- **OSHA Definition:**

- A space large enough for an employee to bodily enter
- **AND**
- Has a limited or restricted means of entry or exit
- **AND**
- Is not designed for continuous occupancy by the employee



# HOW DO YOU ASSESS – PROVE ASSESSMENT?

## Confined Space Entry Program

<b>CONFINED SPACE ENTRY – Classification Form (Page 1)</b>				
<b>SECTION 1: Confined Space Determination</b>				
<b>Location/Description of Space:</b>				
If needing to enter an enclosed space, indicate which of the following apply:			<b>Yes</b>	<b>No</b>
1. Is the space large enough and so configured that you can bodily enter and perform work?				
2. Does the space have limited or restricted means for entry or exit? (Would it be difficult to exit the space through a standard door, ramp, or OSHA-compliant stairs?)				
3. Is the space intended for continuous employee occupancy? (Is the space equipped with HVAC, desk, phone, lighting, or other typical comforts of continuous occupancy)				
<p><b><i>If you have checked ANY of the highlighted boxes, you DO NOT have a confined space. Sign below, stop completing this form, and you may enter without a permit. Otherwise, you have a Confined Space. Sign below and continue completing this form.</i></b></p>				
<b><i>Does this space meet the definition of a Confined Space?</i></b>			<b><i>Circle One:</i></b>	<b><i>Yes / No</i></b>
<b><i>Signature of person completing form:</i></b>				<b><i>Date:</i></b>
				<b><i>Time:</i></b>



# IT IS A CONFINED SPACE – HOW DO I ENTER?

- **Entry Options**

- Space reclassified as a Non-Permit Entry
  - All hazards are removed / controlled prior to entry
- Entry through the Alternate Entry Procedure
  - Atmospheric hazards are controlled with forced air
- Entry through a Full Confined Space Permit Entry Procedure
  - Hazards exist (or have the potential to exist) within the space

# CONFINED SPACE – FULL PERMIT ENTRY?

- **The Ultimate Goal**

- Enter, perform work, exit safely – But have a plan in place if things go wrong

- **Basics of Entry**

- Participants in the entry team must be trained (Entrant, Attendant, Entry Supervisor)
  - Full Permit Confined Space Training
  - Lockout-Tagout Authorized Level Training
- Entry must follow established procedures
- A Confined Space Permit must be completed prior to entry
- Emergency Rescue services must be secured prior to entry



## LOCKOUT - TAGOUT

How it applies to Confined Space Entries

# LOCKOUT TAGOUT

- **Myth: Hazardous Energy is Electrical Energy Only?**



# LOCKOUT TAGOUT

- **Hazardous Energy Includes:**

- **Electrical energy:** Energy from power lines or energy stored in batteries and capacitors
- **Mechanical energy:** Energy created by equipment's moving parts, like chains, wheels or springs
- **Kinetic energy:** Stored energy from elevated parts or equipment
- **Hydraulic energy:** The energy of pressurized liquids (includes water and wastewater)
- **Pneumatic energy:** The energy of pressurized gas (includes air)
- **Chemical energy:** Energy created by a chemical in tanks and lines
- **Thermal energy:** Heat energy (includes steam)

# LOCKOUT TAGOUT

- Common Hazardous Energy for a Confined Space



# LOCKOUT TAGOUT

- Hazardous Energy ISOLATION for a Confined Space



Lockout – Tagout Isolates Hazardous Energy

# LOCKOUT TAGOUT

- What does LoTo look like?





# LOCKOUT TAGOUT

- **Final LoTo Considerations:**

- Locks/tags must be uniform
- LoTo must be substantial enough to prevent removal
- Switches are not acceptable for LoTo control (must be a breaker)
- If equipment is not designed to lock – you must be creative (such as chains)
- Hasps can be used for accepting multiple locks
- Tools/gadgets are available (such as for valve handles and circuits)

